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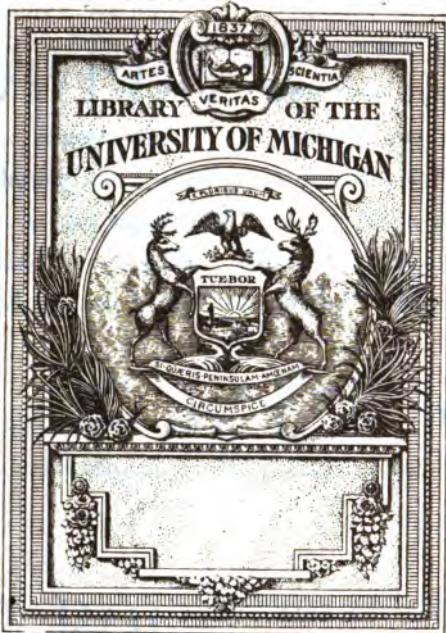
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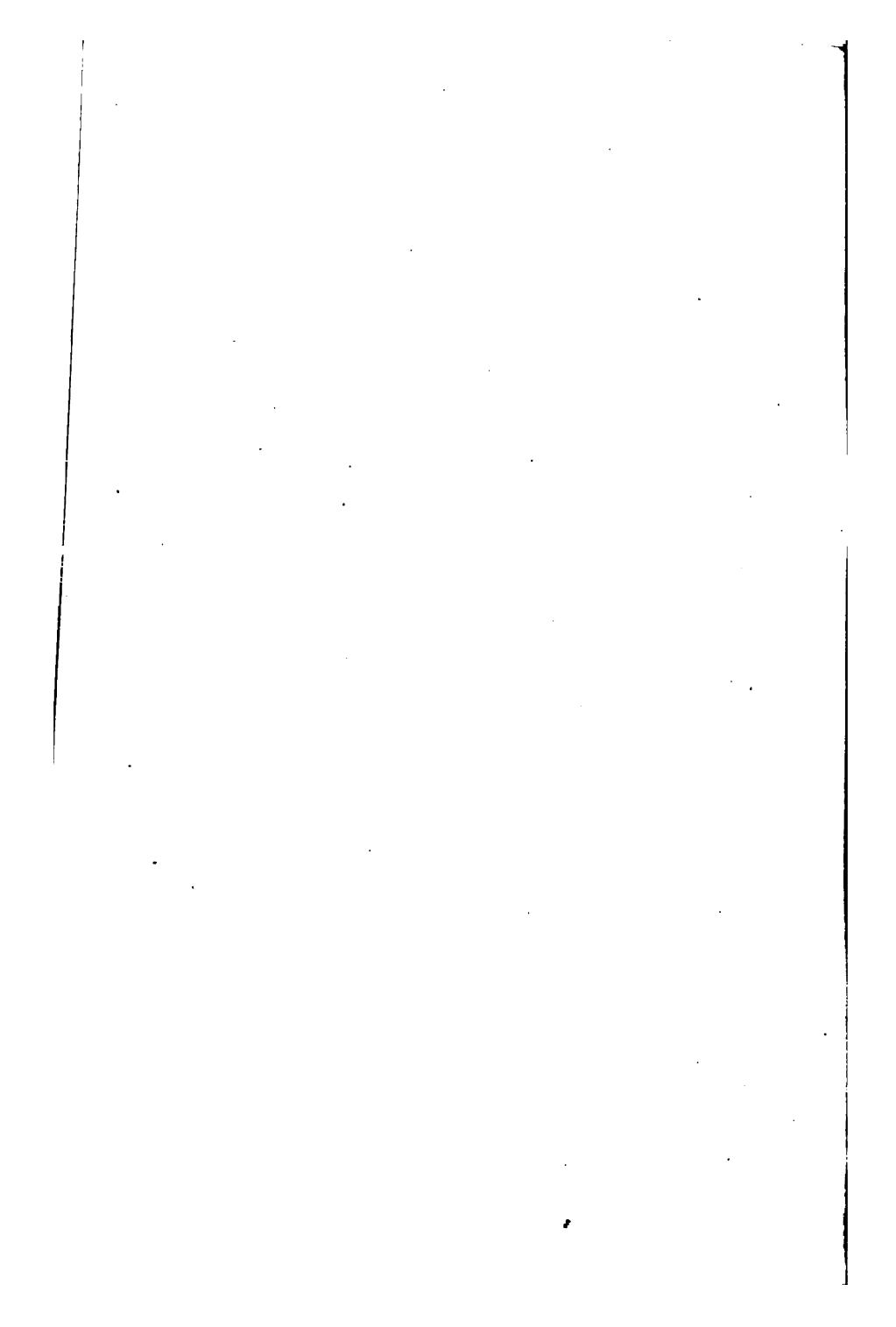
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A Picturesque Window.

Appletons' Home Books.

THE HOME GARDEN.

BY (Illustrate)
Mrs. ELLA RODMAN CHURCH.

NEW YORK:
D. APPLETON AND COMPANY,
1, 3, AND 5 BOND STREET.
1881.

1881.

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C O N T E N T S.

	PAGE
I.—GARDENS AND GARDENING	5
II.—TREATMENT OF THE GROUND	17
III.—WHAT TO PLANT	21
IV.—A CHAPTER ON ROSES	40
V.—LILIES	53
VI.—SPRING BULBS AND AUTUMN FLOWERS	60
VII.—ROCKERIES AND FERNS	71
VIII.—CITY GARDENS	78
IX.—HOUSE PLANTS	90
X.—MINIATURE GREENHOUSES	102
XI.—MUCH IN LITTLE	114

“At length the finished garden to the view
Its vistas opens, and its alleys green.

Along these blushing borders, bright with dew,
And in yon mingled wilderness of flowers,
Fair-handed Spring unbosoms every grace,
Throws out the snowdrop and the crocus first :
The daisy, primrose, violet darkly blue,
And polyanthus of unnumbered dyes :
The yellow wall-flower, stained with iron brown ;
And lavish stock that scents the garden round :
From the soft wing of vernal breezes shed,
Anemones ; auriculas, enriched
With shining meal o'er all their velvet leaves ;
And full ranunculus, of glowing red.
Then comes the tulip race, where beauty plays
Her idle freaks ; from family diffused
To family, as flies the father-dust,
The varied colors run ; and while they break
On the charm'd eye, th' exulting florist marks,
With secret pride, the wonders of his hand.
No gradual bloom is wanting ; from the bud,
First-born of Spring, to Summer's musky tribes :
Nor hyacinths, of purest virgin white,
Low-bent, and blushing inward ; nor jonquils,
Of potent fragrance ; nor Narcissus fair,
As o'er the fabled fountain hanging still ;
Nor broad carnations, nor gay-spotted pinks ;
Nor, shower'd from every bush, the damask-rose.
Infinite numbers, delicacies, smells,
With hues on hues expression cannot paint,
The breath of Nature, and her endless bloom.”

THOMSON'S SEASONS.

THE HOME GARDEN.

I.

GARDENS AND GARDENING.

“I have been in Corisande’s garden,” said Lothair, “and she has given me a rose.”



SUCH a garden as Corisande’s will well bear describing: “In the pleasure-grounds of Brentham were the remains of an ancient garden of the ancient house that had long ago been pulled down. When the modern pleasure-grounds were planned and created, notwithstanding the protests of artists in landscape, the father of the present duke would

not allow this ancient garden to be entirely destroyed ; and you came upon its quaint appearance in the dissimilar world in which it was placed as you might in some festival of romantic costume upon a person habited in the courtly dress of the last century. It was formed on a gentle southern slope, with turfen terraces walled in on three sides, the fourth consisting of arches of golden yew. The duke had given this garden to Lady Corisande, in order that she might practice her theory that flower-gardens should be sweet and luxuriant, and not hard and scentless imitations of works of art. Here in their season flourished abundantly all those productions of Nature which are now banished from our once-ravished senses : huge bunches of honeysuckle and bowers of sweet-pea, and sweet-brier and jasmine clustering over the walls, and gilly-flowers scenting with their sweet breath the bricks from which they seemed to spring. There were banks of violets which the southern breeze always stirred, and mignonette filled every vacant nook. As they entered now, it seemed a blaze of roses and carnations ; though one recognized in a moment the presence of the lily, the heliotrope, and the stock. Some white peacocks were basking on the southern wall ; and one of them, as their visitors entered, moved and displayed its plumage with scornful pride. The bees were busy in the air ; but their homes were near, and you might watch them laboring in their glassy hives."

This is a charming picture of a quaint, old-fashioned garden on a grand scale ; but even ordinary old-fashioned ones, humble imitations of the Lady Corisande's, breathe an aroma that is simply delicious. It is only here and there that one is found ; and the modern florist is slow to admit that half the charm of the old-fashioned garden lies in that look of happy rest among the plants, each of which seems to say, " All plant life is sacred here."

A lover of the old ways mourns : " I spoke of box-edg-

ings. We used to see these in the little country gardens, with paths of crude earth or gravel. Nowadays, it has been discovered that box harbors slugs, and we are beginning to have beds with tiled borders, while the walks are made of asphalt! For a pleasure-ground in Dante's 'Inferno,' such materials might be suitable." But it has also been discovered, among other evidences of progress in gardening, that a small plot of ground cut up into a labyrinth of narrow walks, edged with dwarf-box, is a piece of unsightly patchwork—displeasing to the eye, and undesirable in every way, the later fashion of a smooth lawn, with flower-beds effectively disposed here and there, being much more natural-looking and agreeable. For flowers are like diamonds—their setting should be of the most inconspicuous nature, and never the more prominent feature of the two.

In spite of their faults though, the old gardens, as some one says, stir within us a feeling which the modern ones, with their stiff massing and "blaze of color," fail to excite. Loving memories linger about the little cottage plot—

" Where the marjoram once, and sage, and rue,
And balm, and mint, with curled-leaf parsley grow,
And double marigolds and silver thyme,
And pumpkins 'neath the window used to climb;
And where I often, when a child, for hours
Tried through the pales to get the tempting flowers,
As lady's laces, everlasting peas,
True-love-lies-bleeding, with the hearts-at-ease
And golden-rods and tansy running high,
That o'er the pale-top smiled on passers-by;
Flowers in my time which every one would praise,
Though thrown like weeds from gardens nowadays."

One particular feature of the old-fashioned garden which rendered it so attractive was the intermixture of fruit-trees, vegetables, and flowers—an arrangement

which may not, perhaps, be always practicable, but which is seldom seen even where it *could* be carried out. Apple-trees, at least, would be ornamental on almost any lawn, and, in the season of blossoms, those exquisite, pink-tinged petals, with their Eden-like fragrance, would compare favorably with the choicest productions of the flower-beds. People are apt to think, in connection with fruit-trees in the garden, of thick, tangled branches hung with those invisible webs with which one's face comes into such sudden and unpleasant contact. But this is not the idea at all. The French *cordon* system of fruit culture for gardens is both neat and ornamental and quite invaluable for unsightly walls. Dwarf fruit-trees, too, are all the fashion now.

Is there no beauty in *Pomona* that we can call to our aid? For why should we everlastingly apply to Flora for everything that is beautiful in the embellishment of our gardens? Fruit-trees have flowers as well, and thus they offer us a double supply of beauty; being beautiful when in flower and beautiful when in fruit—pleasing to the eye and to the taste, and ornamental as well as useful—doubly gratifying and doubly enjoyable.

Plants with bright seed-vessels are always in demand for their ornamental qualities; but, after all, these only please the eye, instead of furnishing, like the fruit-trees, “entertainment for man and beast.” Red-cheeked apples, it is argued, are quite as decorative as red-berried shrubs; and the bird’s-eye cherry is scarcely more desirable when in flower than any other cherry, while the ripe fruit, preserves, etc., of the ordinary kind will cause the empty blossoms to “go up at full sail.”

Many varieties of ornamental trees, besides the fruit-bearing kinds, may be dwarfed and trained on the cordon system. These can be obtained at all the large nurseries; and a judicious selection would insure blossoms of one kind and another through the entire season. Such trees are not

out of place in very small gardens ; and a single one, such as an Irish juniper or a Kilmarnock willow, will often prove the central point of beauty.

When trees and shrubs are to any extent impracticable, the lack of verdure in a garden may be satisfactorily supplied by ivy, either trained in pyramids or climbing over an arbor. The smaller varieties will agreeably break the formal lines of parterre gardening ; and the spotted British ivy, the broad-leaved variety, the arrow-leaved, the golden-leaved, the dwarf-marbled, the digitate, etc., may all be effectively used for background. Nothing can be more desirable for edging than the dwarf varieties of this "rare old plant." It is always beautiful, from the rich, dark shade of green in winter to the softer yellowish hue of the young leaves in spring and summer. The variety of veins, spots, and shades is quite a study, and there is no kind of ivy that can not, in some way, be made both useful and ornamental.

In the gardens of the Tuileries the glare of color is softened by the numerous shrubs, both flowering and otherwise, which are planted with the most generous regard to their full development, each being allowed abundant space for its own particular individuality. Nothing is crowded in this arrangement, and stiff as the garden undoubtedly is, with its wide, straight paths, which cut up all the central space, it is not stiff with geometrical beds or solid phalanxes of shrubs and plants. Green predominates and relieves the statuary of its ordinarily staring and conspicuous look. The vegetation consists largely of luxuriant copings of Irish ivy and plant-borders to most of the walks, while the centers of the squares are smooth, velvety plots of beautifully kept turf. In this way, the eye is relieved and rested from the glare of the stone vases, pedestals, statues, etc., and no blaze of color deprives it of its powers of discrimination.

The owner of a half-acre plot would probably object to the magnificent distances of the Tuileries shrubs as an absurd impossibility in his limited space; but it may be answered that it is not a bit more absurd than his attempt to imitate the other arrangements of a large public garden. He will probably undertake a statue or two, a fountain, a rockery, and other *et ceteras* that require space and means.

A garden which is intended for show usually covers a moderately large area, and is not unfrequently replenished by plants already in bloom, in place of those whose "season" is over. It involuntarily reminds one of the children's gardens, that are all "posies," merely stuck in the ground for a few hours. Some one says, not without cause: "A garden is, in fact, no longer the home of plants, where all ages, the young, the mature, and the decayed, mix freely and in easy dress. It has degenerated into a mere assembly-room for brilliant parties, where childhood and age are both alike out of place."

In this artificial arrangement one loses all the delicious pleasure of watching for and reporting the first faint green tips that whisper of coming buds and flowers, the first crocus or snowdrop that shakes its pearly bell defiantly in stern old winter's face; though, for the matter of that,

"Who ever saw the *earliest* rose
First open her sweet breast?"

Garden paths, instead of conducting one, as they should do, out of all labyrinths and difficulties, are often a serious stumbling-block in gardening. They are so seldom picturesque and comfortable at the same time. They either lead nowhere in particular, or curve where a curve is the height of absurdity, or are damp from lack of drainage—except that made upon the owner's purse. For the worst-done work is by no means the least expensive. The experience of a sufferer is that "it is about as much trouble to keep

walks in order as it is the beds, and, unless they are well kept, the whole design will have a slipshod look. When good gravel can be obtained that will pack, the walks can be kept in order with comparatively little labor; but this is not generally to be had, and perhaps the next best thing is some of the different asphalts."

It should be remembered that a path is not for ornament, but for convenience—as a means to an end, and that end is the getting somewhere. It does not add, therefore, to the pedestrian's satisfaction that, in its attempts to be "undulating," it should wriggle like a serpent, or lead him to quite a different part of the grounds from where he wished to go. Beauty in a path consists primarily of a look of naturalness; and a retired, rural-looking place is sadly spoiled by attempts at gravel walks.

"Where wild-flowers and blossoming shrubs, free songs of birds, the murmur of the brook, or theplash of water on the bank of pond or river, fills us with a feeling of solitude, we dislike any appearance of man's labor or artificial improvement. If our way lies through a thickly settled country, where artificial life is constantly forced upon us, where all walks are formal and graveled, all gardens trim and hedged, fences straight, and trees in formal lines, it is an additional pleasure to come upon a spot where nature seems hardly to have been disturbed, where the path we follow seems to have been made by loose cattle, or is a broad road too little used to be regularly made, and so left to wind in and out to avoid a standing tree or a projecting rock."

This is very pretty reading, but the "loose-cattle" theory for paths would scarcely be convenient or agreeable in ordinary cases; it is not necessary, however, to avoid it by going to the opposite extreme of stiffness. A curved path is more pleasing than a straight one, provided it has a reason for being. The planting of a group of trees or

shrubs in the curve, or a better view of the house and premises, will furnish this. Five feet in width should be the smallest limits of ordinary walks, that two persons may walk comfortably abreast without brushing against the plants on either side. A garden procession in Indian file does not produce so picturesque an effect as the same figures in groups. An abruptly terminating walk should be finished by some ornamental object, like a summer-house, a statue, a vase, etc., as though it furnished an excuse for the walk. It is far prettier to make the path return upon itself, which can be done by means of a circular bed of flowers or shrubs, as whatever suggests limits in a garden robs it of half its charm.

The proper edging for beds, since the stiff little rows of box have fallen into disfavor, is a hopelessly perplexing subject. Grass edgings are pretty when carefully trimmed and prevented from encroaching; but it is almost one man's work to keep them in order. Tiles, boards, etc., are also employed with various degrees of satisfaction. Bricks set on end are justly pronounced an abomination; but "the cheap, handsome, easily-put-down and easily-kept-in-order edging is yet to be invented." Edgings of Alpine strawberry plants, placed five or six inches apart, are very ornamental, while the richly flavored berries last late into the autumn. Daisies, pansies, and other small flowering plants are also used and very effectively.

The proper shape for beds depends in a great measure upon the size and shape of the garden. A square or parallelogram, with bias crossings and a round central bed, produces a good effect; but, where the garden-beds are already made, and are, perhaps, nothing more than straight borders along the sides of the fence, the beauty and arrangement of their contents may be made so conspicuous as quite to overshadow the lack of grace and symmetry.

To lay out a garden for a large and varied collection of

plants is by no means an easy matter. The patterns usually given in works on horticulture are often more suitable for embroidery or Mosaic-work, and are tolerable only in masses of color. A garden made on these principles has a bare, dreary look to the lover of nature, who longs for the old-fashioned arbors and arches covered with roses, or clematis, honeysuckle, and Virginia-creeper.

A very pretty framework, not out of place in one of these geometrical beds, is made of wire, and shaped like an umbrella with a very thick handle, and the leaves and blossoms of the sweet-pea, maurandia, cypress-vine, nasturtium, *Cobaea scandens*, and all the family of climbers, twist in and out of the open-work in graceful profusion. The dismantled frame of a real umbrella or parasol, skeletons that are sure to be found in the happiest household, may be used for the purpose.

One of the most effective beds for the lawn is the basket bed, which seems particularly suitable where there are lofty trees. These baskets, to show to advantage, must be prominently raised above the surrounding level. The framework is made of three-foot stakes driven well into the ground and crossed diagonally, like basket-work. This bordering, or fence, surrounds the entire space to be occupied by the basket, and is sometimes made of thick wire painted green. Brown paint may be used to advantage on the wood-work. The entire outside of the basket, including the handle, which gives it its distinctive character, is to be covered with ivy, which should be prepared beforehand from cuttings, and planted under the turf of the lawn. The inside should then be filled with good soil, and left in a convex shape at the top. With a tasteful arrangement of plants in regard to color, a garden basket is a happy combination of nature and art, and, if carefully trimmed and kept in order, it will be found one of the most attractive of floral ornaments.

The selection of plants for various positions requires some judgment, as the beauty of their effect often depends on how they are placed ; some showing to better advantage if looked down upon, others when on a level with the eye, while others, again, must be looked up to. Some accommodating species are satisfactory anywhere. It is a somewhat disheartening, but painfully stubborn, fact, that gardening, even on the humblest scale, is an art, and those who are most scornful over this idea generally belong to the class who never succeed.

With regard to ornamentation generally, "carpenter architecture," besides being expensive, is altogether out of place in small gardens, although harmonious and agreeable in the shape of summer-houses and rustic seats where the grounds are extensive. "It is quite common," says a writer, "to see a little garden, with starveling flower-beds and a few shrubs, bestridden by an elaborate, expensive edifice, miscalled a summer-house, miscalled an arbor, properly called a nuisance." Another popular delusion prevails that empty urns and vases, painted china sets, and ugly statues of mythological deities are appropriate to square plots of grass and patches of flowers. Suburban gardens are often spotted with these things, which are seldom either ornamental or useful. A rich urn or vase of some dark color, either of bronzed iron or terra-cotta, filled with flowers, is a pleasant sight, and may sometimes be used with excellent effect, provided the *right place* for it is secured.

The ornamental properties of decayed tree-stumps, and even of half barrels sunk partly in the ground and covered above it with strips of bark, are too well known to require particular mention ; but a rustic wall-pocket against some grand old tree is not so common, and may be made an unexpected thing of beauty with trailing vines and clusters of bloom. *Vines everywhere* is a safe motto ; hence a curving-in gate, with a light trellis-work over it for graceful

climbers, is an ornamental addition to any garden. For a purpose like this, the beautiful *clematis Jacksonii* is scarcely so well known as it should be ; and the fiery autumn blushes of the Virginia-creeper touch up with just the right hue the *passé* charms of summer verging into fall.

But, whatever else the owner of a small garden may see fit to do, let him not, as Mr. Wegg would put it, "drop into" statuary. Staring plaster casts, unless veiled and draped with abundant green, are, however good in themselves, horribly discordant in a garden. Mr. Lowell says that it is only in such a climate as that of Italy, "that it does not seem inhuman to thrust a naked statue out of doors. Not to speak of their incongruity, how dreary do those white figures look at Fountain Abbey in that shrewd Yorkshire atmosphere !". If statuary must be used, it should be bronzed or of some tint other than white. Occasionally, in extensive grounds, a Naiad by a retired fountain or a Flora may be a rather pleasant object ; but, after all, the most harmonious figures, where Nature is supposed to hold sway, are those of veritable flesh and blood—even if not after the Greek models.

Garden associations, and especially the characters that have always seemed to belong to certain plants and flowers, are something quite mysterious, and "our impressions of flowers are largely built up of these broken, multitudinous hintings, often exceedingly vague and indefinite, but by no means wholly arbitrary. It is from these dim suggestions that our ancestors have drawn our present names of flowers, sometimes with deep insight and poetic truth, sometimes with all sorts of flights and fantastic coloring, lent by medicine, astrology, or alchemy." Many of the homely names thus bestowed are still preserved in England.

From time immemorial, the violet and the lily of the valley have been the favorite types of modesty and sweetness, and these, with mignonette—the "little darling"—

are alike the poor man's flowers and the poet's pets. Milton writes of the "glowing violet," which is something of a puzzle, as is also Shakespeare's "violets dim," unless both are explained by "the contrast of the colder blue tints of the dog-violet with the purple of the scented kind, a purple which catches the eye in a dim, uncertain way known to all violet seekers when the flower lies half hidden among herbage, so that we doubt whether we have really discovered one or not."

Ben Jonson calls the white lily "the plant and flower of light"; according to Leigh Hunt, this is because of its snowy whiteness, also because "there is a golden dawn issuing out of the white lily in the rich yellow of the stamens," and "that silvery glistening of the petals which makes them seem almost to shine with a light of their own."

It must be remembered that there are two distinct objects in gardening, which can scarcely be carried out harmoniously in the same plot; one is to have continuous masses of bloom for a show-garden, the other is to raise flowers for cutting, both to glorify one's own house and to send portions to those for whom no such provision is made. One garden is to be looked at like a picture or wax-flowers under glass, while the other is for human nature's daily food. All sweet possibilities are there, and perchance, in some shady, green-arched path, more than one lover has received a rose from the hand of his Corisande. Some one suggests that these two objects can both be carried out at once, by devoting a space in some out-of-the-way corner to the one purpose of raising flowers for cutting. An amateur gardener accidentally accomplished it by sowing in such a spot a quantity of seeds that had become hopelessly mixed; and the "wild corner," as it was called, could always be depended on for bouquets through the entire season.

II.

TREATMENT OF THE GROUND.

Be it ever so humble, there is no place like a garden—nothing that educates, soothes, and encourages, like the cultivation of flowers, and the smallest plot of ground devoted to this use is worthy of the most reverent care in its arrangement.

Flowers can not but be pleasing, even in the straightest or the most irregular of beds, and they will answer the purposes of cutting as well in an awkward grouping as in a more graceful one. This is no reason, however, why the garden itself should not be made an ornamental object; and this can easily be done by the home gardener without applying to a “professional landscapist.” To arrange the plants according to their relative heights, and as far as may be with regard to contrasting colors, is all that need be attempted in a small space.

To give the small garden a large look is ingeniously managed by as extensive an entrance as the place will admit, and having the central plants low—that nothing may be lost by breaks or divisions. In this case the shrubs and tall plants should be carefully placed at the extreme end. “Be your garden large or small, the paths should always be amply wide enough for two to walk abreast with ease. A fifty-foot garden can actually be made to look stately by having two or three wide walks in it.”

Proper drainage is quite as important a matter in a small garden as on a large farm, as plants in a half-submerged state are sure to be spoiled by mildew. Flower beds should always be raised a little from the level of the walks; but *only* a little, because, if at all elevated, they become dry and baked.

The soil for flowers depends in a great measure on the nature of the flowers to be planted—some requiring a rich, heavy soil, while others thrive better in one of a more sandy character. Roses and pansies, for instance, belong to the former class, and verbenas and geraniums to the latter. But all soil should be made as fine and smooth as possible, and a good authority says: “As a general rule, the lighter and richer the soil, the better it will be for all kinds of flowers. A soil into which you can thrust a dibble with ease to the depth of a foot is of the right texture.”

Even the color of the soil is to be considered, for flowers and foliage do not show well against a yellow or light-colored ground. They require a dark carpet, like the belongings of a room, to bring out their full beauty; and soil that lacks a rich hue is almost sure to starve the plants committed to its care.

The compost heap is a valuable agent in the preparation of ground for flowers, and leaf mold from the woods or pieces of turf will make as good a basis for one as could be desired. It is not an ornamental object, and should be kept well out of sight, particularly as its value depends on the variety of the refuse which is added from time to time. Odds and ends of vegetables, ashes, feathers from poultry, old brine, etc., are highly desirable; while pounded bones and contributions from paper mills and tanneries are perfect mines of wealth.

A little experimenting with wood ashes and iron, dug into the ground about the roots of blossoming plants, will show a wonderful improvement both in flowers and leaves.

Even the petals of white flowers will display an added brilliancy, and the green leaves take on a greater glossiness. It is advised that ferruginous material be applied to the soil by procuring a supply of oxide of iron in the form of dark-colored scales that fall from the heated bars of iron when the metal is hammered by the blacksmiths.

“ When there is an excess of vegetable mold in a flower-bed, and a deficiency of silica or sand, the flowers will never be so rich in color, nor so brilliant as they would be were a liberal dressing of sand or sandy loam worked down into the bed where the growing roots could reach it. If wood ashes can be obtained readily, let a dressing be spread over the surface of the ground about half an inch deep and raked in. A dressing of quicklime will be found excellent for flowers of every description.”

A liberal covering of manure or of leaves in the autumn is a valuable aid to spring operations, and the former is often administered in a liquid form to the growing plants with very good results. The clippings from horses' hoofs are highly recommended for this purpose—one bushel of clippings put into a barrel, which is then filled up with water. After standing for a week, it is ready for use, and may be applied with a watering-pot; every other day not being too often for bedding plants, if not confined in pots. It makes the plants strong, and the flowers large and bright-colored, being not a stimulant, but nourishing food, and, while quite as powerful as guano, is much more lasting. It has the advantage over most liquid manures of not injuring the foliage—although it will change at first to a golden tint; but after a few weeks this gives place to a dark, glossy green.

A soil naturally rich and mellow is half the battle won for a flower garden; but the cultivator is usually engaged in fighting against nature, trying to make a clayey soil porous by the addition of sand, while a light one demands ashes

and the under side of old pasture sods to give it sufficient body. River sand, leaf mold, loam, and manure (the latter well rotted), in equal quantities, make a garden soil that is satisfactory to nearly every plant that grows.

Ribbon beds, where the flowers are all in lines of color, are extremely stiff affairs, and require much care and cultivation, as the flowers must not only be of properly contrasting colors, but, to produce the desired effect, they must all bloom at the same time. Complicated geometrical beds are never agreeable to the eye, and the most desirable form for a small garden, where any variations can be made from the long beds, or for lawn gardening, is the round or circular bed, varied by an oval. The former is easily shaped by planting a stick in the middle of the space, then tying a string to it, and another stick to the other end of the string. The second piece of stick is drawn around the first one as far as it will go, and this defines a perfect circle.

The oval should first be marked by a long line from end to end, and a shorter one across the center; it can then be shaped by degrees until the proportions are satisfactory.

III.

WHAT TO PLANT.

GIVEN a small plot of ground and a desire for the largest possible returns, the question is what to plant. Florists' catalogues only add to the perplexity of the novice ; for so many beauties are there set forth in glowing colors that one naturally wants them all. But one of the very things to avoid is the too common mistake of attempting a great variety where only a few species of plants can be properly accommodated and cared for.

Another thing to be remembered, in furnishing a garden, is that many plants, after a week or two of bloom, put forth no more flowers during the year, and, to avoid being entirely bare of blossoms at some periods, the selection of plants must be arranged with a view to a succession of bloom.

Thus, some roses, although very beautiful at the time, fairly run riot with blossoms in the month of June, when nearly everything is at its best, and during the remainder of the year the plants can not be considered in any way ornamental. So it is with many other things ; and for this reason they should scarcely find a place in a small garden.

A few large flowering shrubs are very desirable where trees can not be admitted, and, among old-fashioned favorites, the lilac, if carefully cultivated, has few superiors. The blossoms of the white variety are exquisite in their delicate beauty and fragrance, and, although the

short-lived bloom is over when the summer has fairly come, it may be made an ornamental shrub as long as the period of foliage lasts. It is generally treated like a very Cinderella of the plant family—its assigned place somewhere near the ash-heap or other deserted spot ; but no fairy godmother ever effected greater transformation than may be accomplished by giving this neglected shrub good soil and good culture. The leaves grow larger and more intensely green ; and training it in tree form, by keeping the suckers down, and giving it a compact, shapely head by judicious pruning of all straggling branches, will make of the lilac a garden ornament of which the most fastidious florist need not be ashamed.

The Tartarian honeysuckle is very ornamental as a screen or hedge, and has the advantage of not requiring any pruning. Its white, red, and pink blossoms are boundlessly profuse ; but the last named is not only the prettiest in bloom, being also the finest of the plants. Its vigor is indefatigable. “ If a single plant dies down from any cause, it will send up vigorous shoots from the roots and fill the breach within six months. It is not ferocious, like bushthorn or hawthorn. It has no enemies whatever that destroy it, and few that ever take from it a leaf. It is a cleanly, bright-looking shrub, apart from the blossoms. Set the plants about two or three feet apart, and the growth will surprise you. In two years you will have a fine screen.”

Flowering shrubs, some of which, later in the season, are ornamented with scarlet or white berries, are very desirable even in small gardens, as they help to keep up a succession of bloom ; and some old favorites are sure to be found in every country garden. Among this class of plants, the most enterprising in regard to bloom is the *Forsythia viridissima*, its bare branches thickly covered with yellow flowers being one of the first signs of spring.

The evergreen Mahonea, with particularly rich foliage of a deep purplish-green, also flowers very early in the season, and its blossoms are very much the same hue as those of the Forsythia.

The *pyrus Japonica*, or Japan quince, has gorgeous scarlet flowers, shaped like the ordinary quince blossom, growing close to the branches before the green leaves have had a chance to show themselves ; and “a hedge composed entirely of it seems like a line of fire when in blossom ; combined with hemlock or arbor vitæ it is still finer, the evergreens presenting a beautiful contrast to the flowers.”



Guelder Rose.

The old-fashioned “snowball,” or guelder rose, still holds its own, and bears large balls of snowy blossoms in May. It is a tall shrub, and almost reaches the altitude of a tree. The pretty rosy blossoms of the flowering almond belong to the same period ; but the little shrub is quite overshadowed by its aspiring contemporary.

The wigeleas, which seem to bloom in ready-made bou-

quets with plenty of foliage around them, have various shades of rose, pale pink, and white mingled in their blossoms, which appear in May and June, while the leaves are of a glossy light green, making the shrubs desirable all through the season. *Deutzia gracilis* flowers at the same time, and its abundant clusters of pure white flowers and its hardy habit make it deservedly popular.

The Syringa, or mock-orange blossom, is an old-time favorite that minglest its strong perfume with the more delicate odor of June roses; and the creamy-white flow-



Gordon's Mock-Orange.

ers, with stamens of deep gold, grow in thick masses that make the shrub (often eight feet high) a mass of snowy bloom.

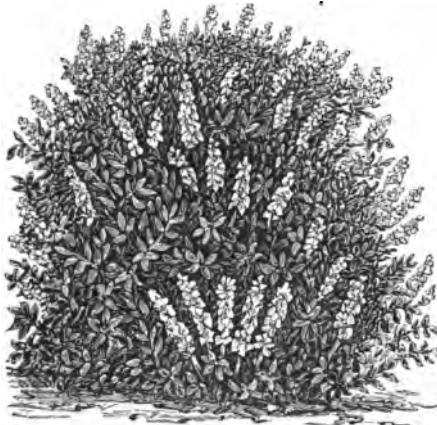
Children especially delight in another June visitor, the blossom of the sweet-scented shrub, or spice bush, also known as strawberry shrub; but they would scarcely recognize it as *calycanthus floridus*. The flower has very narrow, thick petals of a dark maroon color; and the foliage is light green and very glossy.

The spiræas, blooming in June and July, are liberal with their flowers of various shades, such as pure white, yellow white, pink white, lilac, etc. The bridal-wreath, one

of the prettiest varieties, bears profuse clusters of pure white blossoms at intervals on long stalks.

The euonymus, or burning bush, is very well known as a handsome shrub with purple flowers, which culminate in queer-shaped berries, of bright flaming scarlet, suspended by a long stem. These berries retain their beauty for a long time, and sometimes gleam rosily through a light fall of snow.

The berries of the black alder are of a still more vivid scarlet, growing close to the dark stem, and lasting well into winter. The shrub, too, is attractive without these ornaments. Others also, like the barberry, privet, snowdrop, etc., "produce berries quite as beautiful and striking as their blossoms, and which take up the beauty where the flowers leave it, and carry it on to midwinter."



Dwarf Horse-Chestnut.

The althea, or rose of Sharon, is quite extensively used for hedges, and is one of the handsomest shrubs we have. The single flower is not unlike a hollyhock in shape; and the color varies from purple-pink to pure white. The double blossoms are quite pretty, and of these the white ones

carry off the palm. The green leaves of the althea are noticeably handsome.

A very charming shrub is the dwarf horse-chestnut, or dwarf buckeye, which forms a dense mass much broader than high, and bears numerous masses of long slender spikes of white flowers, to which the long stamens give a fine feathery appearance.

Many other shrubs might be mentioned, but these are sufficient to show the wealth of material from which the shrub planter can make a selection. Those mentioned, with a few low hemlocks, will produce charming contrasts of yellow, purple, and scarlet, mixed with dark green.

Among vines, roses stand preëminent in point of beauty, as they do among the flowers everywhere; but *all* roses are not desirable as vines, while the flowers are worthy of a chapter by themselves. The beautiful wistaria is almost perfect as a climber, its graceful foliage retaining a light, cheerful green to the last, and its rich, grape-like clusters of light-purple flowers appearing profusely in the spring, and at intervals, sometimes, during the summer and autumn. It grows very rapidly, the *glycine Sinensis*, or Chinese wistaria, attaining a great height and spreading out over a large surface.



Chinese Wistaria.

English ivy is always desirable, and its dark glossy leaves are the most effective of backgrounds for bright-colored flowers. It has the disadvantage, however, of slow growth, and is often neglected for more rapid climbers.

The most ambitious of these are the *tropæolum*, *Cobæa scandens*, American ivy, Madeira-vine, morning-glory, etc. Of the first named, the *tropæolum major*, King Theodore, has dark crimson blossoms and bluish-green foliage, begins to bloom at a very early age, and continues throughout the entire summer and early autumn. It often attains a height of twelve feet, and has thick, massy branches. It is easily raised either from seeds or cuttings, and does not require a very rich soil, having been found to grow most satisfactorily in a mixture of fibrous-rooted loam and sand.

Cobæa scandens is a somewhat rough vine, with rich purple bell-shaped flowers—also a very rapid climber.

The Dutchman's pipe, or *aristolochia sipha*, has immense leaves which make a dense shade wherever it is planted, and is very desirable on account of its hardiness when once fairly started. The small vines, however, grow rather slowly when first transplanted.

The Madeira-vine is a rapid grower, and its small, fragrant, white flowers are quite profuse. It likes a rich, light soil, and when settled to its satisfaction will draw out its lengthened sweetness from ten to twenty feet.

The morning-glory has some gorgeous varieties, among which are noticeably a large blue and a large magenta-colored blossom, both having white fringed edges.

The American ivy, or Virginia-creeper, is deservedly popular, not only for the rich green of its luxuriant foliage, but for the gorgeous scarlet and crimson of its autumn dress. It makes rapid growth during one season, and outgrows in time every support that can be provided for it, climbing with giant strides to the very house-top, and wreathing

itself around chimneys and eaves in the most decorative profusion.

Clematis has the advantage, besides other attractive qualities, of blooming late in the summer when other flowering vines are generally past their period of bloom. There are



Clematis Virginiana, or Virgin's Bower.

several varieties of this plant: *clematis fortuni*, bearing double white blossoms that are deliciously fragrant; *clematis rubella*, rich purple ones; *clematis Jacksonii*, a profusion of large violet-colored ones; and *clematis Stan-dishii*, deep blue.

Honeysuckles are always in order, and, although old-fashioned to a degree, hold their own among the freshest beauties. There is a sort of prim sweetness about them that is infinitely delightful, and among the numerous varieties the fragrant pink and white monthly is, perhaps, the most satisfactory. The coral honeysuckle, though scentless, is quite ornamental, and of the new imported

species the Chinese golden-leaved *lonicera* is very handsome with its gold-netted foliage and fragrant white flowers.

The pretty Japanese vine, *ampelopsis Vetchii*, with its wonderful growth and exquisite sprays of tiny bright-green leaves, becoming larger toward the base of the branches,



Blue Passion-Flower.

and putting on bright crimson hues with the approach of cold weather, has only to be seen to be thoroughly appreciated.

The passion-flower vines are all beautiful, and the half-hardy variety will bear summer cultivation in the open air.

Vines are not only ornamental, but highly useful for covering unsightly objects, such as a shabby fence or trellis-work ; and they form admirable screens against inquisitive neighbors.

Annuals are more uncertain than shrubs or vines, and take longer to come into bloom ; but no garden is complete without some of the finer varieties, and there are some favorites with which it would be very hard to dispense. Candy-tuft and pansies and sweet-peas and mignonette, with balsams, asters, and chrysanthemums, will give constant masses of bloom, and in connection with a few bedding plants will make a respectable garden of themselves.

Hardy annuals, such as sweet-peas, candy-tuft, mignonette, etc., can be planted as soon as the frost is out of the ground in the spot where they are to bloom ; but the more tender varieties must be started in a hotbed or within doors, and transplanted when the second pair of leaves appears.

A moderately rich soil suits them best, and nearly all flowers but pansies insist upon a southern exposure. The latter really do better in the shade, and are therefore especially adapted to city gardens.

After being well spaded up, the ground should be thoroughly pulverized, so that nothing of a lumpy nature remains to destroy the tender rootlets. It is then ready for the seeds, which are planted according to their size, the fine ones being merely sprinkled on the bed and a little earth sprinkled over *them*, the larger sort lightly raked in, and such as sweet-peas must descend to a depth of three or four inches. This prevents them from mildewing and enables them to bear the heat of a dry season better.

Some seeds need soaking in water to make them germinate, and those of the pretty, delicate cypress-vine refuse to come up at all without an application of boiling water. Camphor water is said by an ingenious experimenter to be infallible for this purpose, and he says that seeds which have lost the power of germinating can be restored by it ; those that are weeks and months in germinating can be sprouted in almost as many days, while plants

soaked or watered with the solution are made more vigorous and healthy.

A veteran gardener makes the statement that, "if garden seeds, when planted in the spring, are firmly pressed when under the earth by the ball of the foot, at the time the gardeners are putting them into the ground, they will invariably grow, drought or no drought ; and, what is still more important, they will spring up earlier and grow faster than any of their kind which have not been subjected to this discipline."

After the seeds have sprouted and the infant plants have attained to the dignity of four leaves, they will require transplanting or thinning out, as plenty of room to grow in is necessary to a healthy condition and luxuriant blooming. A foot apart is none too much space for such plants as balsams, petunias, and asters.

The transplanting should always be done in cloudy weather, or, better still, at night ; as even fruit-trees in flower moved at night will come into bearing as if they had not been disturbed, while those transplanted during the day will drop their fruit unperfected. In transplanting, as much earth as possible should be retained around the roots, and the plant should be carefully shaded and watered afterward.

A few of the most desirable annuals for a small garden are : sweet-peas, mignonette, asters, balsams, petunias, candy-tuft, chrysanthemums, convolvulus, cypress-vine, lobelia, mignonette, nasturtiums, *phlox Drummondii*, salpiglossis, whitavia, sweet alyssum.

This, with other plants, is a sufficiently long list for a small garden ; but, if other varieties are desired, any florist's catalogue will furnish their names and habits.

Among the perennials, which seem, like the annuals, to die at the approach of winter, but which still retain vigorous life at the roots and spring up in renewed beauty

with the first mild weather, are all the beautiful varieties of pinks, pansies, forget-me-nots, daisy, campanula, datura, petunia, verbena, etc. Many of these come under the head of bedding plants.

The biennials are two years in perfecting their blossoms, which usually appear for only one season. Sometimes, by preventing the formation of any seed vessels, two or three seasons of bloom may be secured. To this order belong the German stock, Canterbury bells, hollyhock, etc.



Dwarf Double Hollyhock.

As a general thing, bedding plants are far more satisfactory than annuals and less trouble. Their first cost is greater, but so are the returns, and, once fairly started, they can generally be depended on for constant bloom and beauty. A succession of circular beds on each side of a broad path, filled with well-selected and well-arranged varieties, is a garden of itself that is both pleasant to look upon and almost inexhaustible in its supply of flowers for cutting.

A handsome foliage bed is very desirable in the center of a garden that is not confined to side pieces of ground, the beautifully tinted leaves having the effect of a rich mass of tropical blossoms, and affording an admirable background in filling large receptacles with cut flowers. Foliage plants are expensive if one insists upon having colens, geraniums, achyranthus, etc. ; but a very pretty collection can be made from home-raised seed at a trifling expenditure.

A circle twelve feet in diameter is the best shape for this central ornament, and, in a confined space, it may be of smaller dimensions. *Ricinus*, tri-color or purpurens, makes a good central plant, and around this should be drawn a circle a foot and a half distant from the center. On the line thus made may be planted cannas, *nigricanus* or *Waresewicksii*. Then follow four other circles, each one foot apart, on the first of which should be planted amaranthis bi-color, and on the next tri-color ; next, *cineraria maritima* ; then a circle of pyrethrum, golden feather, etc., and the border may be made of centaurea.

This makes a really handsome bed, and one within the reach of a very limited purse. Canna-seed requires to be soaked in hot water for an hour before planting (camphor water would probably do even better), and should be started in boxes early in the season. The others also should be started under shelter, in readiness to plant in the bed by April. One foot apart on the lines is a good distance for the plants.

Verbenas are among the most popular and satisfactory of bedding plants, and are usually raised from cuttings ; but they can be raised from seeds, if well soaked beforehand, and many beautiful varieties are obtained in this way. They delight in hot sun and plenty of sand, and, if the bed is covered with the latter two or three inches deep, they will bloom all the better.

To make a verbena bed it is recommended to dig out the garden earth a foot deep, and fill it half full of horse manure, which may be taken directly from the stable ; the



Hybrid Garden Verbenas.

cavity is then made level with rich garden soil. After setting out the plants, a peck of white sand is scattered all over the bed, which is of sufficient dimensions to accommodate twelve plants.

The following treatment for a verbena bed already used has proved highly successful : "Early in the spring, about the middle of March or 1st of April, or whenever the warm sun and the condition of the soil make working in the garden a necessity to us old lovers of the earth, I pull up all the old verbena vines, pile them and all the leaves that have collected around them in the middle of the beds, set fire to them, and when they are burned rake the ashes well into the soil. A few shovelfuls of rich earth or well-rotted manure is a good addition. About the 1st of May the verbena begins to come up from self-sown seeds, and

when they are two or three inches high I thin them out until they stand about four inches apart ; they will grow very rapidly. As soon as the blooms appear, all that are not satisfactory are pulled up. The richest purple, the purest white, the most intense crimson, the most glowing scarlet, the softest lavender, and the rosiest pinks will delight your eyes, and there will be no long, straggling stems or ugly patches of burnt-up soil visible, but masses of color and foliage, and material all summer long for innumerable bouquets."

No lover of flowers should fail to have a bed of pansies, as, aside from their beauty, they will thrive in shady places where scarcely any other plant will blossom. The north-east side of the house is therefore the place for the pansy bed, where the ground should be made as mellow as possible, and mixed with at least one half of the richest stable manure. The seed should have been sown in a box the previous autumn, and the young plants protected from freezing during the winter.

Pansies may be grown from cuttings, with greater certainty of producing fine flowers, and their growth is much more rapid. But the smallest plants produce the largest blossoms ; and after reaching a certain size, unless there is a rigorous pinching of shoots, the blossoms will deteriorate. The cuttings should be planted in sand, and will be fit for transplanting in about six weeks.

When pansies have bloomed steadily for a couple of months, the branches should be well cut down and the plants mulched with old cow manure ; they will then make their finest show of blossoms in the early autumn.

Violets are closely allied to pansies, and make up for their less showy appearance by their delicious odor, of which, like that of the arbutus, one can scarcely get enough. They need a rich, strong soil, and thrive best with fowl manure, do not like too much sun, and require plenty of

water in the morning. They are usually in the perfection of their bloom during the month of May.

They are frequently cultivated in pots for winter blooming ; but the following is a simpler method of procuring flowers in cold weather. A few old boards are formed into a bottomless box, three or four feet in length and two feet wide ; this is sunk into the earth, on the sunny side of the garden, to nearly its full depth. The top of the box should slant, and be covered with a glass door or lid on hinges. With the planting of five or six strong, healthy violet stalks, this small winter garden is complete ; great care, however, is necessary to make it successful. In mild, sunshiny weather, the glass door should be opened, but always closed at night. As soon as settled cold weather has arrived, the plants should be thoroughly covered with dry leaves, and when they are wanted to bloom this covering can be removed.

On extra cold nights, and days, too, three or four pieces of carpet or old quilts should be covered over the box, and if these directions are carefully followed, the reward will be plenty of violets at Christmas, and, perhaps, later in the season. Eternal vigilance, it will be found, is the price of flowers, and especially in winter.

Geraniums are magnificent bedding plants, and all the shades of scarlet make a blaze of color that is scarcely attained by any other plant. The numerous varieties of geraniums, double, single, and foliage species, will make a garden of themselves ; and few plants are so easy to raise. They require very much the same conditions as verbenas, with not *quite* so large an allowance of sand. A mixture of good garden loam, decayed leaf manure, old cow manure, and sand is recommended as the best soil for profuse blooming.

An easy method of starting cuttings of geraniums or other bedding plants in early spring, for those who have

neither a greenhouse nor a hotbed, is to put them in small bottles filled with rather warm water; the bottle should then be hung to the window sash by tying a string around its neck. Wire will answer the same purpose. A padding of cotton-wool around the mouth of the bottle will prevent the water from evaporating, and by keeping up an even temperature will make the cuttings sprout sooner. When the roots are an inch long, the cuttings should be transplanted, taking care to spread out the tiny rootlets just as they have grown in the water.

If, when the cutting has attained the proper growth, the bottle be filled up with rich earth, which is left to dry off for two or three days, and the glass then broken, the young plant can be set out without disturbing its roots at all. This is recommended as the surest way of obtaining plants from cuttings. The "saucer system" is even easier, and has the recommendation of accommodating many cuttings at a time, while the bottle holds but one. A saucer is filled with sand and kept constantly wet. In this wet sand the cuttings are inserted, and then placed in the full sunlight. This method is also particularly suited to geraniums, and many other cuttings will root quickly in the same way.

Geraniums that have bloomed during the winter may be made to do summer duty by cutting back their branches to the distance of several joints, and keeping them in the shade, with abundance of water, for a week or two. They can then be used as bedding plants, and will bloom luxuriantly.

The list of geraniums is too long to enumerate. Among them, the single varieties with white eyes and large flowers are very handsome, and a pure white one, *Reine des vierges*, is exquisite. A bed shaded from this, through the pale and rosy plants to the crimson giant of bottles, pleases the eye with its perfect harmony. The scarlets should stand by

themselves, or in conjunction with white only, and the double ones, to show to advantage, should never be massed.



Scarlet Geranium.

These last are confined to scarlet and rosy pink, and the beautiful buds and blossoms are like those of tiny roses.

The zonale geraniums bear enormous trusses of flowers; the Tom Thumb variety is a dwarf species ten or twelve inches high, but with flowers as large and fine as those of the other kinds; the gold and silver tri-colored geraniums and the ivy-leaved geranium are very ornamental as foliage plants, while those with sweet-scented leaves, preëminently the old-fashioned rose-geranium, are valuable accompaniments to cut flowers.

Geraniums will bloom well in winter if treated as follows: "Procure young plants of the varieties you wish about the middle of May. Put them in four-inch pots, this being the best way to keep them for the next four months.

Use well-decayed sod, adding about one third cow manure. Mix thoroughly together ; but do not make too fine, as the geranium delights in rather a rough compost. Place them in a shady situation, first putting about four inches of ashes under the pots. Keep them on the dry side, as you do not want to encourage growth. Should any flowers appear, pinch them off, also the leading shoots, to keep them in shape. Toward the end of September repot them in six-inch pots—that is, six inches in diameter—in the compost recommended above. They will now commence to grow freely. About the 10th of October put them in winter quarters, selecting the window where they will get most sun and light."

Heliotropes, carnations, bonvardius, fuchsias, and others are all used in large gardens as bedding plants ; but in a small space they would come more appropriately, perhaps, under the head of winter flowers.

IV.

A CHAPTER ON ROSES.



Rose Pillar.

A SMALL garden planted entirely with roses has a beauty and individuality of its own, a dignity which is quite lacking in those ambitious attempts which seek to crowd into a small space all the contents of the florist's treasury. A rose *bed* should, at least, be had in every garden, and a good large one, too, while such of the pillar varieties as are desirable might climb to their hearts' content in every spare nook and corner.

If roses are satisfied with their treatment, no plants yield better returns for the care and labor bestowed on them ; but, if they are neglected, or managed ignorantly, they are sorry-looking affairs.

The first requisite in their cultivation is a stiff, loamy soil, which it is scarcely possible, says a rose authority, to enrich too highly, one fourth old, well-rot-

ted stable manure to three fourths of good soil not being too great a proportion. Personal experience has proved



“The roses clustering o'er my portal
Breathe welcome to you, fellow mortal.”

that roses grown on ground thus enriched, frequently stirred, and kept free from weeds, are larger, more perfect-

ly formed, and freer from diseases or insects. To prepare a bed for roses, the ground should be well spaded and pulverized to the depth of a foot, and the fertilizing material then dug in. The best time for this is as soon as the frost is sufficiently out of the ground to allow of working.

Some florists consider roses among the easiest of plants to raise, while others class them among the most difficult. Many amateur gardeners are very successful with them merely by feeding well, and placing them in the full sunlight—this they *must* have—and pruning them closely, both after they have bloomed and when they begin to sprout in the spring.

Cuttings of roses may be grown in the way recommended in the last chapter—by using bottles of water with cotton batting tied firmly around the mouth—but it is safer to procure them of the florist already started, as they can be sent safely by mail almost any distance. The best time to plant cuttings is in July and August; and these should be cut off close to the old wood, and several “eyes” should be left above ground. Wet sand is highly successful for the first soil; it is less trouble where there are several cuttings than the bottle process, and a dozen or so may be set quite close together in the same pot. If covered with a glass, they will be kept moist, and attain to the dignity of plants in two or three weeks.

The Chinese plan of raising roses is from layers, which generally succeeds; but an indispensable condition is to have already large plants not too high in an open bed. The layering is done during any one of the summer months, and late in the autumn the plants are ready to take up.

When the roses have been procured as small plants, and the ground is ready to receive them, a successful cultivator directs: “Wet the roots of the roses, so that the earth will adhere to them; make holes of suitable size; put in the plant slightly deeper than it has grown; *spread out the*

roots nicely in their natural position ; cover with fine soil, and pack down tightly with the hand."

No low plants or grass should be allowed to encroach upon the roses, as their roots require all the moisture they can obtain, and the smaller plants will absorb it. A plan of irrigation recommended for the culture of strawberry and tomato plants would answer admirably for roses ; and this is to take an old fruit can, pierce it with one or two pinholes, and sink it in the earth near the roots of the plant. The holes are made very small, so that when the can is filled with water it will trickle into the ground very slowly. A quart can, if properly arranged, will keep a plant moist for several days ; it is then refilled. "Plants thus watered flourish and yield the most bounteous returns through the longest droughts. In all warm localities where water is scarce, the planting of old fruit cans will be found profitable as a regular gardening operation."

Another plan for watering roses is to "dig a hole by the side of the rose-bush, not near or deep enough to injure the roots, however, and plant a flower-pot about four inches in diameter. Do not fill the pot with earth, but leave it empty, and have it either even or a little below the surface of the ground. When necessary to water the plant, fill this pot with water, and it will be astonishing to see how very rapidly the water is absorbed ; refill two or three times. The water given in this manner goes at once to the roots, where it is needed, when, if applied to the surface of the ground, most likely it would not be given in quantity sufficient to reach the roots ; besides, surface watering tends to bake and harden the soil. Liquid fertilizers can be applied in the same manner ; and should be given in moderate quantities, and not too strong, twice a week."

Roses are the natural product of June, and the month of months would not be itself without them ; but a garden of roses must have bloom all the season through, and the

house needs them as well. "Is it possible," writes some one, "to have an unbroken succession of roses? No doubt it is; for what one has done others may accomplish. But what of the expense and appliances, number and character of houses, plants, etc., needed? Nothing to be alarmed at. Of course, space, plants, and certain conveniences are requisite; and if one could command a rosery under glass, properly warmed, the supply of roses all the year round would be made easy. But without that, and with a moderate supply of, say fifty, or one hundred, or two hundred plants in pots, the year may be wreathed round with roses."

The most hardy roses are the hybrid perpetuals, the moss-roses, and climbing-roses; but the ever-blooming roses almost literally fulfill the expectations raised by their name. The tiniest plant will repay proper treatment by blooming steadily on until severely nipped by frost. This species is exquisitely formed and wonderfully sweet. A dozen young plants will give more satisfaction in a small garden than anything else that can be placed there.

Beautiful masses may be made with the Agrippina, Cramoise superior, Lucilla, Louis Philippe, and sanguinea, for dark red; the Empress of Russia, Regalis, pink daily, Melville, and Duchesse-Brabant, for rosy pink; and the Bella, Julia Manais, Madame Bravy, Marie Guillot, and Devoniensis, for pure white.

Among the hybrid perpetuals, the dark red are, Prince Albert, Duplessis de Morny, Count Bismarck, Giant of Battles, and George Washington; the bright pink are, Belle de Normandy, Anna de Diesbach, La France, John Hopper, and La Reine; the white, Alfred de Rougemont, Coquette des Blanches, Coquette des Alpes, Lady Emily Peel, and Baron Maynard.

These roses, on account of their hardiness, are particularly desirable for out-door culture, as they will live through the winter in very exposed situations with comparatively

slight protection. The flowers often measure six inches in diameter, are very rich in coloring, and extremely sweet. They do not bloom much during the first year of planting, but reserve their forces for a grand "opening" in the succeeding spring. Such dark, rich, velvety reds, such glowing pinks and creamy whites, are scarcely seen in any other species, and, although the bloom is not constant, it may always be counted on early in the season and at intervals during the summer and autumn months.

A moss-rosebud is the most exquisite thing the garden produces, but moss-roses are less common than any others, because of the comparative difficulty of raising them and their slowness of growth. The full-blown blossom has lost its beauty ; but of the plant it is justly said : " Nothing can eclipse and nothing can rival her. She is and ever will be the favorite of poetry and art. The eloquence of her opening buds, half wrapped in their mossy envelope, will remain through all generations a chosen interpreter of the language of youth and beauty."

Moss-roses do not mind partial shade, as they will do very well under trees ; but, like all other roses, they require deep, rich ground and insist on plenty of moisture. Most of them bloom but once in the season, and are rather chary of their blossoms with us ; but they are grown to a large extent for the London market. In England they are planted between currant and gooseberry bushes, about two feet apart, or under fruit-trees at a distance of three feet. Various vegetables are interspersed with the roses, and seem to agree with them, for the result is a wonderful amount of bloom.

" After they have done blooming, and have made good wood, they are layered on both sides of the rows ; and in October, or any time between that and the following March, the layers are lifted, and after their roots have been dressed and their tops shortened a little, they are

planted out in permanent rows from two to three feet apart, or, if space is scarce at the time, thickly in rows about a foot and a half apart, where they remain for twelve months before being finally planted out. They are pruned very closely in winter, and in spring they begin to form flower buds almost as soon as the leaves make their appearance. It is the buds that are gathered for market, the blooms never being permitted to expand. In hot summers and, indeed, whenever convenience permits, the space over their roots, two or three feet in width, is mulched with litter, which saves them from drought, and also acts as a stimulant."

The finest of these roses is the *Glory of Mosses*, which is deep carmine in color and very large and double. It is extremely fragrant, and the rich hue of the buds gleams through a perfect web of moss.

Princess *Adelaide*, of a beautiful pink, grows faster than most of the others, and has very large, double flowers. *Comtesse de Murinais* is a large, pure-white rose, with beautiful moss; *Luxemberg*, of a bright, crimson scarlet; and the *Raphael* is of pinkish-white shaded with rose, while the large buds are densely covered with lovely moss.

The lovely tea-roses are included in the ever-blooming; they have a peculiarly delicate, tea-like fragrance, and put forth a constant succession of blossoms. To this list belong the magnificent *Gloire de Dijon*, the popular *Safrano*, the *Devoniensis* "with the perfume of the magnolia," the *Bon Silene*, and many other favorites.

The first of these, the *Gloire de Dijon*, is perfect both as a rose and as a climber; the petals are of a creamy, pinkish-white with a buff center, "and, what is very rare, the half-opened bud and full-blown rose are equally perfect. There is always a succession of bloom, and the flower does not soon wither; the foliage is a beautiful, glossy green; it is a climber and rapid grower. One bush has in the last ten

years covered the side of a house, and is now one mass of bud, blossom, and perfect leaf spray. If possible, a south-western exposure should be given it."

Among climbing roses, the old-fashioned Lamarque will supply lovely, pure-white buds, sometimes shading to a pale yellow. This is a good bloomer, and very desirable in a small collection.

Gem of the Prairie, as distinguished from the Prairie Queen, has a delicious fragrance, and the color of the petals is a shade between rose and crimson. It is very strong and grows rapidly, being deservedly popular as a climbing rose.

Not much can be said for the Queen of the Prairie, although it is to be seen everywhere, except that the buds are lovely in color and very compact. The blossom has no fragrance, and as soon as it reaches its prime it fades to an ugly purple tint that makes the plant anything but an ornamental object. The rose is strangely globular in shape.

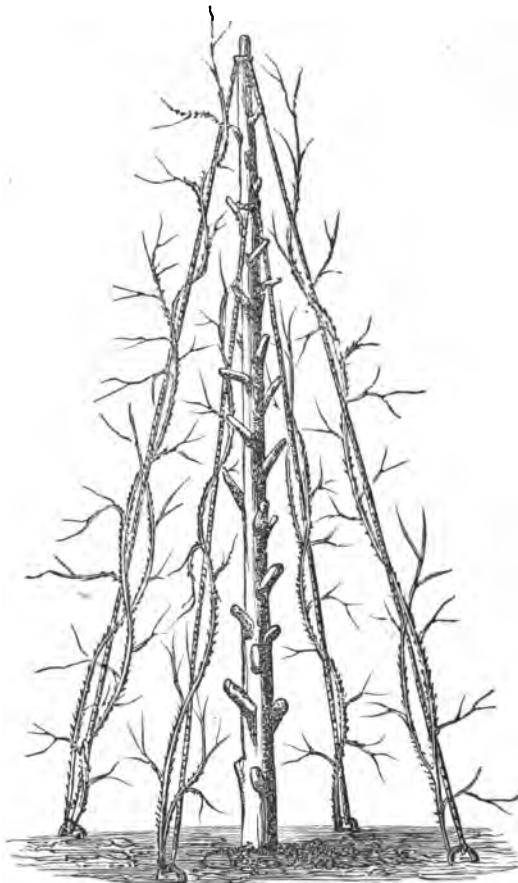
The Baltimore Belle has the tiniest and most delicate of buds, and the half-blown rose has a certain dainty, languishing sort of beauty, with its pale tint and almost imperceptible fragrance. But it seems insignificant beside the richer-looking beauties, and its bloom is confined almost entirely to the month of June.

The Cottage Rose is of a rich crimson hue, and the buds are very pretty; but the full-blown flower is quite single and faded in color, and has no fragrance. It, too, blooms only in June.

Champney is both double and fragrant; the blossoms shade from deep to pale rose, and it is one of the most desirable varieties.

Pillar roses are very ornamental, and may be trained in various ways. One of the easiest is to place upright posts or stakes about a foot apart—four of them forming a square,

to be united by chains or strong wires interlaced ; the rose is then planted in the center, and branches trained to grow



Poles and Chains for Pillar Roses.

outside and twine about these supports. They can be erected in any desired spot, and, covered with a well-trained rose, form very pretty ornaments for a small garden.

Twelve desirable roses for pillar training are : Running Hermosa, pink ; Gloria de Rosamond, scarlet ; Fellenberg, rosy red ; Joan of Arc, white ; Mdlle. Aristides, pale yellow ; Phaloe, buff pink ; Superba, pale pink ; Solfaterre, yellow ; Triomph de la Duchere, pink ; Washington, white ; Celina Forester, yellow ; white Microphylla.

The wild rose, although it soon loses its beauty when expanded, is very rich in coloring, especially in marshy situations, and has a delicious fragrance. The bushes are generally low and the leaves small ; but the brilliant color of the seed vessels is as ornamental in autumn and winter as are the blossoms in summer. A bank or bed of these roses would add to the beauty of a garden where there is room for them, and cultivation might produce wonderful results. The period of flowering generally extends over several weeks.

The old-fashioned white rose, that blooms in June and after that is idle for the rest of the year, has a pearly iridescence of tint that is peculiar to itself, like the faint sweetness which it exhales. The palest of flitting blushes seems to pervade its petals ; and its delicate, perishable beauty, a very snow wreath in bloom, seems a natural product of northern New England, where it is found in the greatest perfection and apparently most at home. The bush sometimes reaches a height of ten feet, and is covered with blossoms as with a fall of snow. Pruning in spring, instead of in autumn, will keep back the roses until June has expended most of her floral wealth.

The full, satisfying rose odor is lodged in the breast of the blushing damask, grown in Asia by the acre for the manufacture of rose water and attar-of-roses. This is the perfect rose for brightness and fragrance, and, although blooming only in June, its sweetness can be made to last through the winter by laying the gathered blossoms in a handkerchief box, or putting them into a jar with salt and

spices. The damask rose is full of thorns, and a flower is gathered under difficulties without the aid of knife or scissors ; but one bush, at least, should have a place in every garden to make it fragrant for thirty days with the very breath of June.

Roses are the most desirable flowers to cultivate for winter bloom, and, although requiring constant attention, they abundantly repay it. Rose growers vary in the methods pursued, some succeeding best with pots, and others in an open border. The latter seems more like their natural condition, and under favorable circumstances it produces fine blossoms, thoroughly developed and free from insects.

“If you wish,” says a florist, “to use the same roses for winter bloom that have bloomed in your garden in the summer, it can be done in the following manner: Plant in open ground in spring, cultivate well, let them bloom all they will—these flowers, at least, you are sure of ; take up early in the fall, say by the middle of September or the first of October, according to season and locality ; handle with great care, so as to break and disturb the roots as little as possible ; cut back severely, at least two thirds or three quarters of the tops ; keep the plants damp while handling, and use every precaution to prevent them from wilting.

“Pot at once with good, rich soil, in suitable-sized pots, well pressed down, water thoroughly, and set away in a cool, shady place, like a moderately light, airy cellar ; let them remain here for at least two weeks. If watered thoroughly when first potted, they will not probably need watering again during this time. They can then be brought up into moderate light and heat. During their rest they will have started leading roots and got ready to grow ; and, if care is taken that they do not get light and heat too strong at first, they will push up rapidly and come quickly into bloom. But the period of *cool shade and rest is absolutely*

essential to success, and it is important not to water too heavily when first brought up. Sprinkle the tops and leaves, but water the roots sparingly until the plants are in vigorous growth. When the proper conditions are observed, it will be found very easy to have rosebuds all the year round."

It is an inexpressible comfort to the average gardening mind not to be ordered to nip off present buds for future possibilities, the principle of a "bird in the hand" applying with peculiar force to the uncertainty of horticultural pursuits; and the advice to let one's roses "bloom all they will" during the summer is sure to be gratefully carried out.

A temperature of from 75° to 85° with sun heat by day, and from 50° to 55° at night, is a favorable one for roses; but thorough ventilation is as essential as heat. In bitterly cold weather a good syringing, instead of air, will answer the purpose. When windows are opened for ventilation, great care must be taken to guard against sudden changes, and it is never desirable to let a strong wind blow upon the plants.

Of two magnificent roses that are constantly grown for winter blooming, one is the Maréchal Neil—a tea-rose, very large and delightfully fragrant. The buds are noted for their great size and their clear sulphur-yellow hue, and the rose is successfully cultivated by amateurs, being a good bloomer both in summer and winter. The other is the well-known hybrid perpetual, General Jacqueminot, with its rich, velvety, scarlet petals and magnificent buds, and, if grown in any quantity, "the best method of treating Jacqueminots is to plant them out of doors in a bed of the size you intend to cover with glass. Let them grow for at least one year in the open ground before building your house over them. The house should be built with sash, so that you may strip it at pleasure, leaving the plants exposed to

the air till the time for starting. In starting the Jacque-minot house, be cautious not too give too much fire heat. Commence with a night temperature of 45° for the first two or three weeks, then increasing to 50° as the young growth advances, giving plenty of air at all convenient opportunities."

To improve the color of roses and the general condition of the plants, a decoction of soot is very efficacious. This must be collected from a chimney or stove where wood is burned, and it may be put into an old pitcher or watering-pot, where hot water is to be poured upon it. It should be left to cool, and the plants can be watered with it every few days. "The effect upon plants is wonderful in producing a rapid growth of thrifty shoots, with large thick leaves and numbers of richly tinted roses."

The greatest drawback to rose culture is the endless number of insects that seem to love this beautiful flower, not wisely but too well. Among these nuisances the most prominent are the aphis or green fly, the rose-slug, and the rose-bug. The remedy for the first is tobacco smoke or a hot-water bath; for the second, white hellebore; and for the third, picking off by hand. The hot-water bath must not last longer than two seconds at once; and a table-spoonful of the hellebore is to be dissolved in two gallons of boiling water, and when cool applied to the leaves with a whisk broom, the under part as well as the upper.

A fact not generally known, and somewhat difficult to believe, is that a large onion planted near a rose-bush, so as to touch its roots, will very much increase the fragrance of its flowers.

LILIES.

A GARDEN scarcely seems complete without lilies, and this large and beautiful family is so easy of cultivation, and so very ornamental in bloom, that there is no excuse for neglecting it.

The old-fashioned white lily, *lilium candidum*, that seemed to bring a white stillness into the busy hum of the July noon, and stirred the unspoken thought in those who lacked the poet's tongue—

“ Oh, what are these lilies dipped
 As in the pale moonbeam,
 That quiver with unsteadfast light,
 And shine as through a dream? ”—

still holds its place in many gardens, where

“ In white, calm peace on high
 Each rears a blossom'd rod ”;

every blossom a censer wafting delicious fragrance. Each flower lasts a long time, whether growing on the plant or placed in water, the smallest bud opening fully after it has been cut. This desirable characteristic is peculiar to the entire family.

The flowers of the common white lily are very perfectly formed, turning gracefully down like large bells from tall, slender stalks that are crowned, sometimes with three blossoms, sometimes only one, and occasionally with seven.

The plant is very easily grown, being a native of this country, and it will last from year to year without any protection.

The bulbs can be planted at almost any time, although autumn is considered the best season, and the bed can then be covered with manure, and the plants left to get ready for blooming the next summer.

The Japan lilies have become quite at home in our gardens, which their gorgeous blossoms make beautiful during the month of July, ranging from pure white in color to the deepest rose. A pink lily is always beautiful, and



Gold-banded Lily.

roseum, the most common perhaps of this species, is spotted with rose in such a way that the effect is a delicate pink.

The magnificent *aratum*, or gold-banded lily, has immense flowers of pure white, with a broad gold-colored stripe through the center of each petal. This is decidedly the queen of the Japan lilies, it is more delicate than the other varieties, and also more expensive. It is more frequently cultivated in pots than in the open ground, and makes a very ornamental greenhouse plant. From ten to twenty golden-tinged blossoms are often seen on one stalk, and they send forth a peculiar spicy fragrance.

The bulbs should be first put in a six-inch pot, filled with a mixture of rich loam and fine sand renewed each season. As it commences a new growth, repot into a pot two inches larger than the one in which it was grown. With this treatment, bulbs but three years potted have sent up six stems, and produced more than one hundred and fifty flowers in a single season.

Rubrum, which has large rose-colored flowers, spotted with dark crimson, is another beautiful variety, and *Longiflorum* has long, trumpet-shaped flowers of pure white. *Album* is also pure white, and very lovely. *Tigrinum* is a very showy species, orange spotted with black, and bears a great quantity of blossoms for a longer period than any of the other kinds.

These lilies all thrive best in a rich, dry soil—a mixture of peat, sandy loam, and well-rotted manure, and the bulbs should be planted from four to six inches deep. They like almost any situation but a damp one; and “nearly all the failures in lily culture are due to the fact of their being placed in too wet ground. Use portulacca or any low-growing annuals to shade the ground. This will not only give two crops of flowers in the season, but will make the lily bulbs much stronger for the next year’s flowering.”

The white day-lily, which folds up like a small umbrella at sunset, is of a peculiarly snowy whiteness, with a rich, sweet odor. The buds are very beautiful, and the plant,

which grows low, with very broad, light-green leaves, will generally blossom from July till September.

The pet among lilies, the pearly, fragrant little lily-of-the-valley, is very evanescent in its beauty, a week or so in May being the only time when its dainty bells are seen among its capacious sheltering leaves. A large bed of this plant is necessary to produce much in the way of bloom, and any sheltered, out-of-the-way place, where the soil is rich and moist, will suit it admirably. No care is required—only plenty of room for the long, tuberous roots.

Pond-lilies, loveliest of a lovely family, are becoming naturalized as garden flowers, although it is necessary to grow them in their native element. Good garden soil may be used with it, although the black mud in which they originate (when it is possible to get it) is of course better. A tub of some kind is also required; part of an ordinary cask, sunk in the ground to be more out of sight, will answer the purpose admirably. To fill this, a quarter full of earth will be sufficient, and the plant only requires to have the stem pressed well into it.

“The big affair which passes for the root is really the stem, which lies along the bottom of the pond. One side of this produces roots which take a strong hold of the soil, as every one who has tried to get one up knows, while buds producing the leaves and flowers are on the upper side. When the tub is filled with water no further care is required during the summer, except to supply water as it may be needed, as it is not likely that the rains will make up the loss by evaporation. Unless the tub can be so protected that it will not freeze solid, it should be moved to the cellar at the approach of cold weather. Only as much water need be left in the tub when it is moved as will be needed to keep the soil moist.”

An account is given of a gentleman who discovered a rare lot of white pond-lilies at Block Island, and secured a

number of them for domestication, carefully noticing, as they were pulled from the earth, what depth of soil the roots took. It was found that they struck down about one foot, branching out in various directions for nourishment. On bringing them home, he had them placed in tubs, the same depth of earth being provided as the plants took when growing naturally. The tubs were then filled with water, and kept full until the cold weather set in. When frozen sufficiently, they were taken to the cellar, where they remained all winter.

On the approach of spring he had them replaced in his yard, and after a short time the roots showed signs of life. From that they have grown into perfect plants, the leaves covering the surface of the water, and buds and flowers developing naturally. The flowers are among the most exquisite specimens of pond-lilies to be found anywhere, and the fragrance from them can be detected for a long distance from the spot where they are growing.

This seems to prove conclusively that pond-lily culture in tubs is successful.

The calla, or Ethiopian lily, is properly a house-plant, and seldom seen in out-door culture; yet a few are occasionally met with as an appropriate border for a small jet of water or a large fountain. For, although not like pond-lilies, native to water, they grow on its very edge, and enjoy being as close to it as possible.

This lily is one of the most popular of plants for indoor cultivation, although quite scentless and decidedly chary of its blossoms; but its creamy, yellowish whiteness, that seems to take a golden tinge from the deeply tinted stamen, makes a beautiful contrast with violet or red flowers, as the center of a bouquet; while two or three of the flowers alone, with the large rich green leaves, make a charming group for a good-sized receptacle.

The calla thrives best in a soil made of equal parts of

well-rotted sandy sod and well-rotted cow manure. To have it bloom well, it should be kept in as small a pot as possible, and even allowed to get "pot-bound." Plenty of sand in the soil is a necessity, as the plant is a great water consumer, and requires drainage to prevent the earth from becoming sour. It rejoices in light and sunshine, but will bear having the pot shaded by another plant.

"After taking out of the ground and potting, place in some shady position for eight or ten days, and water spar-



Calla *Aethiopica*.

ingly. About the 10th or 15th of November begin watering with warm water; commence with water milk-warm, and increase the heat gradually each day until the water is hot, but not scalding. Pour the hot water upon the earth and not on the stalks of the plant. Do not be sparing of water at any time, except for a few days after potting. This will make it bloom about the holidays."

No plant requires such perfect rest during the summer as the calla, and for this reason all sorts of odd experiments are tried with it, a favorite one being that of turn-

ing the pot on its side in the shade, and neglecting it altogether until cool weather. But it is better to put the pot in the earth, within an inch or so of the top, in a shady place where it will make little growth, and water it sparingly.

When properly cultivated, calla lilies sometimes measure from six to eight inches, and from five to seven will appear on one plant.



The Long-flowered Lily.

VI.

SPRING BULBS AND AUTUMN FLOWERS.

SPRING bulbs are among the most satisfactory of flowers, and especially suited for amateur cultivation. Requiring very little care, they seem to bloom simply because they *must*, and not because they are coaxed into it. A box of



Garden Crocus.

hyacinths is an April window-garden of delight, and one that fills the house with its fragrance.

A bed of crocuses in the open air is the first fulfillment of spring after the snowdrops, which seem more like an avatar of the winter covering from which they derive their

name. Following the crocuses, come hyacinths with their bells of fragrance, narcissus, tulips, daffodils, jonquils, polyanthus, ranunculus, anemone, etc.; and these different varieties of spring bulbs give a gorgeous mass of blossoms that seem to start from the ground without the accompaniment of foliage.

The hyacinths only can be called sweet-scented, and probably for this reason they are the most popular. There are many varieties of this desirable flower and different modes of culture, all of which are successful if a few important rules are followed. There will be blossoms under almost any circumstances, but not such blossoms as will reward proper care and attention.

Any time from the first of October until frost is the best for planting hyacinths and other spring bulbs in the open border. Good garden soil, with about two inches of well-rotted manure and sand mixed with the soil, will produce their best in the way of bloom, and horn shavings, or anything of an enriching nature, wrapped around the bulb, will add size and brightness to the flowers.

Mr. Copeland recommends to the planter of bulbs to "take a tin tube in the shape of a truncated cone six inches long, about three inches in diameter at the large end, at the smaller one and a half or two inches; take the bulb in your left hand, in your right the tube; press the small end down into the earth as far as you wish to set the bulb—



Hyacinth.

four inches for tulips, etc., one and a half for crocuses ; drawing up the tube, you will find it filled with earth as high as it was pressed deep into the ground, the tapering shape preventing the earth in the upper and larger end from falling out at the smaller. Now set the bulb down at the bottom of the hole, its pointed end up. If it is a hyacinth, shake a little sand over it ; then invert the tin tube over it, and the earth removed to make the hole will be replaced. This will be found to be the most neat and rapid way of planting bulbs. Any tinman will make such a tube for ten cents."

It is a good plan to sow pansy seed between the bulbs, as they come early into bloom—just after the crocuses—and keep the bed looking bright all summer long. Verbenas, petunias, and portulacca are also useful in this way.

To grow hyacinths in pots for the house, the same kind of soil is required, and as small a pot as will well accommodate them. A piece of broken pot should be placed over the hole at the bottom, to prevent the worms from getting in and the roots from growing out ; then fill with soil, leaving the apex of the ball just above the surface, and press the soil firm. After potting, give a good watering, and place them in some out-of-the-way corner of the garden where they can have the requisite amount of protection from frost till they are well rotted, when they may be removed to the greenhouse, forcing house, or drawing-room, as may be required, keeping near the light and giving abundance of water.

For glasses the single varieties do better, and should be selected for weight rather than size. Half an inch of finely broken charcoal should first be placed at the bottom of the glass, as this will keep the water pure and prevent the necessity of frequent changing, care being taken to renew it when it sinks below the level. The lower end of the bulb should only just touch the water, as immersion will

spoil it. Soft water is preferable, and if not naturally soft, it should be made so with a little borax or ammonia.

A closet or any cool, dark place will be the best receptacle for the glass for the next six weeks, which will be about the time necessary for the roots to fill the glass. The flower spike will then be very apparent, and the plant should have light and air. When the color becomes visible, the more light and air that are given, the brighter will be the hue and the shorter the spike and leaves. The sun should never be allowed to strike directly upon the glass, as it would make the water too hot.

A novel method of growing hyacinths in water is to take a large sponge, make incisions in it, and place the bulbs in it. It is then placed in a vase filled with water, and a thimbleful of rape seed scattered over the surface, which it covers entirely with a fine, moss-like mantle that adds greatly to its beauty. By using warm water, the flowers come more quickly into bloom.

The pure white, blush, and rosy hyacinths are the most beautiful in all the varieties, but most bulb growers want also dark-red, dark-blue, porcelain-blue and blue, buff, yellow, and scarlet, all of which are to be found in single flowers as well as double. The cheap varieties range from 70 cents to \$1.20 a dozen.

A bed of tulips is a gorgeous sight, composed of all the colors of the rainbow, and the shape of the single flower is particularly fine. It is even more easily grown than the hyacinth, but is without its fragrance, and not so great a favorite for house culture.

A mass of tulips will show the finest shades of purple, scarlet, crimson, pink, yellow, and pure white, variegated with such striped varieties as purple, violet, crimson, rose, puce, cerise, and yellow stripes on pure-white grounds, and crimson, scarlet, maroon, and red markings on rich gold grounds. The double flowers are very handsome, and a

little later in blooming than the others, which helps to keep up a succession of bloom.

Any one can raise tulips. They require the same soil as hyacinths, and should be planted the same depth and about four to six inches apart, according to the size of the bulbs. "In addition to using them for bedding purposes, they should be largely grown in herbaceous grounds, in shrubbery borders, etc., in which a few clumps introduced at intervals have a most magical effect."

Different kinds of low-growing annuals, such as forget-me-nots, pansies, daisies, alyssum, etc., can be planted as well with tulips as hyacinths, as they benefit the bulbs, instead of injuring them, and save that part of the garden from the cheerless appearance it would otherwise present when the short spring bloom is over.

Next in importance to the hyacinth and tulip, although earlier in blooming, comes the crocus, very bright and pretty in coloring, although insignificant in appearance. It is necessary to have a great many crocuses to produce a good effect, and they appear to better advantage in edgings or rows than in beds. They have the advantage of growing in almost any soil or situation.

Another dwarf flower, sometimes mixed with the crocus, is the ranunculus, very brilliant and beautifully formed. "As a cut flower, it is quite as useful as the rose itself, while for bedding, ribboning, massing, and edging, in separate or distinct colors, the effect is truly magnificent in the spring flower garden." The flowers of the double large Persian variety are about two inches in diameter, and shaped very much like a camellia or a rose. The double turban, which is earlier than the former, is more of a peony shape.

Snowdrops are said to be improved by neglect, and they seem persistently to flourish under the most unfavorable circumstances. It will be safe, however, to bestow upon them the same cultivation as upon other spring bulbs.

The narcissus, jonquil, and daffodil belong to the same family, and are desirable as spring varieties in a large garden, but, where the space is small, the brighter species already mentioned will be found more satisfactory.

The summer and autumn flowering bulbs are quite numerous, among them Japan lilies, which have already been considered, gladioli, dahlias, tuberoses, etc.

Of these, the gladiolus is the most indefatigable for bloom, and the most varied in its beautiful and brilliant coloring. Its long flower spikes begin to show themselves in June according to the variety, while the later kinds will continue to bloom until December. The early flowering ones last longer than the others, and as cut flowers seem almost imperishable.

The pink and rose-colored varieties, as well as the pure



Dahlia.

white, are very clear and beautiful in coloring, and some of the flowers are of great size. A bed of gladioli shows as many hues as one of tulips, and, with an arbor-vitæ or any

other dark-green background, they are displayed to great advantage.

Dahlias are handsome, showy flowers, also with great variety of coloring, requiring plenty of sun, and disposed to make themselves at home in almost any soil. The tall plants must have plenty of room, and the pompon species, from eighteen inches to two feet high, are more desirable for small spaces. These range through all the shades of maroon, crimson, rose, pink, blush, white, scarlet, yellow, purple, vermillion, etc.

The most beautiful perhaps, although the least varied, of all the summer bulbs is the tuberose, with its waxy petals, bearing the faintest tint of rose, and its delicious perfume. It is a thoroughly tropical plant, and requires a great deal of heat, a long, warm summer being the most favorable for flowering out of doors.

It is necessary to start the plants either in a greenhouse or a warm, sunny window early in the spring, and by the middle or last of June they may be turned carefully out of the pots into rich garden soil. The flower stalks, like those of the gladiolus and dahlia, should be firmly tied to stakes, and the blossoms will appear about the first of September. The flowering may be kept up in cold weather by carefully repotting and moving them back to the house, but bulbs that have once blossomed never bloom again. If planted in August, they will come into flower during the winter.

“Some people,” says a cultivator, “grow this fine bulbous plant as they would onions, by merely covering the top of the crown, and then complain that they are a very uncertain flower at best. Now, if they would only plant them deeply, say five or six inches, the foliage would not wither and die so quickly during a dry time.”

The amaryllis, to which family the tuberose belongs, generally known as the Jacobean lily, or *A. Formosissima*, is a low plant, which usually produces two flowers of a lily

shape and a rich scarlet hue. It will bear planting out of doors in May, when it will bloom quite late, sending forth flowers two or three times in one season.

This variety can also be grown in water, like a hyacinth, making a lovely contrast to the white, blush, and pale-buff ones.

Other varieties afford the most varied hues and shades in white, red, yellow, and violet, both plain and striped, and one exquisite species, known as the Lily of the Virgin, is pale pink tipped with rose.

To insure the best success, these bulbs should be "potted in good fibrous loam with about one third leaf mold, and some well-decomposed manure and silver sand added, then started in heat, and have attention after flowering to ripen off, discontinuing water as the foliage shows signs of going off, but avoid shriveling the leaves. With a moderate collection of these bulbs, a succession of their beautiful flowers may be had all the year round."

One of the richest of autumn flowers is the salvia, or Mexican sage. Of an intense cherry-scarlet that deepens with the coolness of the weather, it is in a perfect blaze of beauty by October, but it is so late in attaining its perfection that it is liable to be nipped by the frost before it has done its best. There is a blue variety which is also very pretty, but not so common as the red.

Petunias also rank as autumn flowers, but they seem to be in bloom a great portion of the summer, and keep on blooming to the very last. They are particularly desirable as bedding plants, and, although rather coarse in character, some of them are of delicate shape and exquisitely tinted and mottled. Some of the double varieties are very handsome. They can be raised either from seeds or slips.

Mr. Copeland says: "Do not neglect petunias. They are such strong and coarse-growing plants that we might at first doubt the possibility of getting much color from

them, but they may be relied upon for that purpose, and for a long time. Do not get mixed seed, except for planting in a mixed bed. They are not good for small beds, and



Double Petunia.

attain their full beauty only in the mixed bed, where they may be allowed to fringe some plants and hang their blossoms over the edging on the grass. They gain fragrance as the weather grows cold, particularly the white, and give it off freely on the cool nights of September, when they may be perceived at a great distance.

Carnations, which begin to bloom in July, continue through the autumn and winter (under shelter), and fully deserve their name of monthly. They are raised from layers and cuttings, and do best in soil formed of turf from an old pasture. The flower shoots require careful tying, and the buds should be thinned out to make larger and more perfect flowers. "All pinks are very apt to split one side of the calyx, when the petals burst through the opening, and this spoils the beauty of the flowers. To prevent this,

when the petals first show, tie a thread, or, better, slip an India-rubber band round the top of the calyx, then with a sharp knife cut slightly the notches between its divisions. The edge of this notch is hard, and it is the difficulty of breaking it regularly that causes the flower to split one side. If cut a little, there will be no trouble."

The pure white carnations are very pretty and sweet-scented, being very popular for winter bouquets. There are also bright pink, carmine, and striped ones, which, like all the pink family, have a strong spicy odor.

Other varieties of the pink, especially the picotee, are much cultivated for their constant bloom and bright, showy flowers.

Among herbaceous plants, those whose roots survive the winter, and do not require fresh planting in the spring, the



Drummond's Phlox.

phlox Drummondii, with its blossoms like large verbenas, is one of the most pleasing and lasting. It can be raised in almost any soil, but thrives best in good loam, and enjoys

a change of situation every two years or so. It may be raised as an annual, and is also propagated from the roots, cuttings, or layers. A bed of phloxes in September is a brilliant addition to the garden, ranging through all the shades of red, purple, and white.

The asters, which usually come into bloom in August, are a large and showy family, easily cultivated, and displaying great variety in the size and coloring of their flowers. The "quilled" asters are very full and pretty, in lovely shades of pink, purple, and pure white. They require so little care that the busy owner of a small garden will find them highly desirable.

The chrysanthemum, or "Christmas flower," so called from its late bloom, is the pet and pride of the autumn flowers, and the large, queenly blossoms of the white variety are especially beautiful. The pompon, or small flowered kind, is very pretty in form and coloring.

The plant is hardy and easily cultivated in rich light soil, being raised from suckers, layers, and cuttings. These will require house culture until the middle of May or first of June, when, for blooming in-doors the succeeding autumn and winter, they should be repotted in a strong, rich compost, and, after being plunged in the ground, should be kept well watered, sometimes with liquid manure. For six weeks or so the ends of the growing shoots should be pinched off, and by the middle of August they will form their flower buds. The plants should be brought into the house before the first heavy frost.

A single plant of the pure white variety will bloom profusely in-doors, and this, with a delicate shade of rose, will probably be as much as the amateur will care to undertake.

Large, strong garden plants are raised by setting them in the open ground in May and potting them early in September. Under the old name of "artemisia," they are often found of great size in country gardens.

VII.

ROCKERIES AND FERNS.

SAYS a writer on flowers: "I would have, in a large flower garden, a corner or a belt, where nature and apparent neglect should reign throughout the season. I say *apparent* neglect, for, of course, noxious weeds must be exterminated everywhere. Yet in this unmolested ground should grow aquilegia, lychnis, hollyhock, aconite, delphinium, dicentra, foxglove, lathyrus, cardinal-flower, peonies, phlox, campanula, yucca, filamentosa, sweet-briers also, and many other low bushes, if there were room enough. I would have the creepers there, too, such as vinca, money-worts, partridge-berry, ground-pine, and all hardy trailers, native or foreign, that will endure our climate. The lower plants of my lazy bed should be hellebore, trilliums, hepaticas, star of Bethlehem, hardiest of the asphodels. *Clematis erecta* should be there, also mullein-pink, daisies, gentian, alkanet, violets, and sedum, while mother-thyme, hyssop, and other hardy herbs should sun themselves on the borders of my natural garden."

A very pretty idea where there is room to indulge it, and it may be partly carried out in a rockery of moderate dimensions by those who have not space enough for this attractive scheme. A rockery, when placed in a proper position, is a lovely bit of cultivated wildness, a sort of pre-meditated *happening*, that adds much to the beauty of a rural residence. But a level plain of grass or the center of

a flower bed is *not* the proper position. To be pleasing, it must have the air of having grown naturally among its surroundings.

Most gardens or grounds of any reasonable size have some patch of *terra incognita*, so far as cultivation is concerned, some irregular, brambly corner, or uneven section, of which stones seem the natural product; and such a spot is just the place for a rockery. "For the idea which rock work as well as water should suggest is that it is natural to the spot, that it has either cropped up from the soil, or that it has been laid bare by some process of excavation which was necessary to the formation of the ground."

In this connection rises up the experience of a friend, the owner of a very pretty little suburban residence, who had with considerable trouble erected a mound of rocks and earth beneath her dining-room window, where no such excrescence could possibly be supposed indigenous to the soil, and, while the green things on the structure were yet struggling desperately for a precarious existence, the lady decided to rent her house for the summer months. A very impressive personage, with India shawl and eyeglass, came to view the premises, and was exceedingly minute in her investigations. "That pile of stones," said she, waving a perfectly gloved hand toward the mound outside the dining-room window, "will, of course, be removed?" "Stones!" stammered the discomfited proprietress, "why, that is my—my rockery!" "Ah!" murmured the lady of the eyeglass, as she peered through that invaluable magnifier, "of course it is; how very stupid of me, to be sure! But I am so wretchedly near-sighted."

In getting up a rockery, a general idea or plan should first be perfected in the mind of the constructor, containing some approach to the size and form to be assumed by the completed edifice, as without this it will be a haphazard collection of uncongenial stones and plants, looking

like a sort of Absalom's pillar at which every passer-by has had his fling. The rocks should harmonize with the character of the surrounding country, and should be arranged as naturally as possible, forming a sort of outside crust filled in with earth, and with plenty of earth in all the pockets or crevices. The shape is a matter of taste, but an irregular outline is more natural and effective.

A very small rockery requires more care and judgment in its construction than a larger one, and is the only kind admissible in a limited space. It should never be made a central or prominent object, but is intended to be come upon unexpectedly. A terraced arrangement looks well, and affords particular advantages for the disposition of plants. The larger stones, as a general thing, should be placed at the base, but a large, rough fragment of granite makes a very artistic finish at the top for the support of a creeper of vivid green or blazing autumn scarlet.

In planting a rockery, all plants but low-growing ones and tufts of fern should be avoided. Those of a stiff, upright nature are particularly undesirable, and simple, wild things are more generally adapted to this style of cultivation. There is so much beauty in the partridge-vine, wood ferns, trailing arbutus, hepatica, etc., that almost any piece of woodland will abundantly stock a very tasteful rockery, but Virginia-creeper, with its rich October blushes, ivy, tradescantha, moneywort, and many others on the florist's list, are not to be objected to in addition. The alpine family of plants seem made especially for such purposes. They require plenty of soil for their wandering roots, and are best satisfied with a sandy loam. Perfect drainage and a reasonable amount of moisture are also necessary to their well-being.

With these requirements answered, the following delicate bloomers will make any rockery a thing of beauty: *Æthionema cordifolium*, with silvery leaves and plenty

of lovely pink flowers; *acæna Novæ Zealandiæ*, which makes a perfect carpet of its leaves, through which crimson spikes of bloom shoot up with singular effect; *dianthus alpinus* and *dianthus petræus*, both very pretty; *erinus alpinus*, with rose-purple flowers; *gentiana verna*, *myosotis rupicola*, *saxifraga*, *sedum*, and a host of others. The maiden-hair fern is also lovely in a rockery, and a mingling of wild and cultivated ferns produces a charming variety.

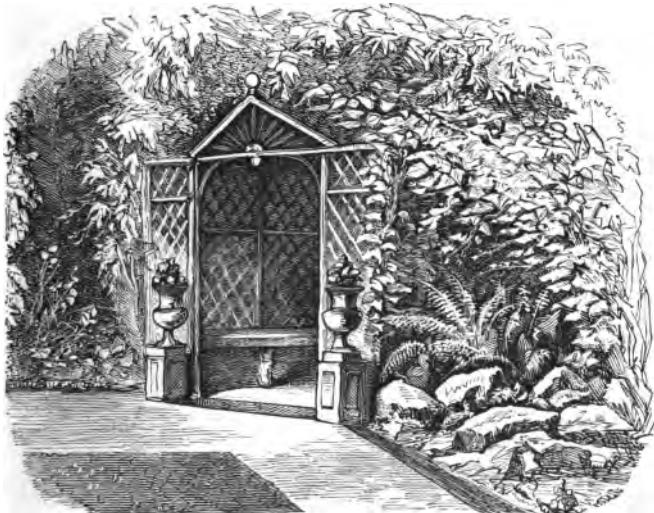
A small blighted tree, cut to the proper height, leaving a few shortened, low-growing branches, may have a rockery built around it, with rustic-looking baskets of terra-cotta, cocoanut shells, or beach shells, suspended from these protuberances, and filled with growing and trailing plants. Wandering Jew and smilax, Kenilworth ivy and dew plant, will all do well in a rockery, while pansies will flourish in any shady place if they can have plenty of manure. Their low-growing habit makes them very desirable for the rockery.

If the situation is cool and damp, wild ferns and other denizens of the woods will do miracles in the way of beauty, and the vivid scarlet of the partridge-berry will glow with richer luster amid the dark-green leaves.

Ferns are not only beautiful in a rockery, but beautiful in themselves and in every situation in which they can be placed. The grand country mansion has its "fern house," where the graceful fronds are grown in all their varieties, but the ordinary kinds may be raised in any shady bed where nothing else will grow, and many a damp, dreary back or side yard might be clothed with beauty by planting a basket or two of woodland treasures.

The proper soil for ferns is said to be equal parts of sand, loam, and leaf mold, with a little charcoal. But a lady writes of her ferns: "I have a bed along the north side of our house, about sixty feet long and two feet wide, filled with dirt from the wood-pile and some from the woods,

although I have other ferns that do equally as well that have only wood-pile dirt. The long bed is filled with ferns and a border of pansies, and every one who sees it admires it, and well they may, for it has such a cool, refreshing look. I try to encourage everybody to grow ferns, for I love them so dearly myself. I get my ferns whenever I happen to have a chance, no matter what time of year it is. I know they like a damp, shady place, but mine do

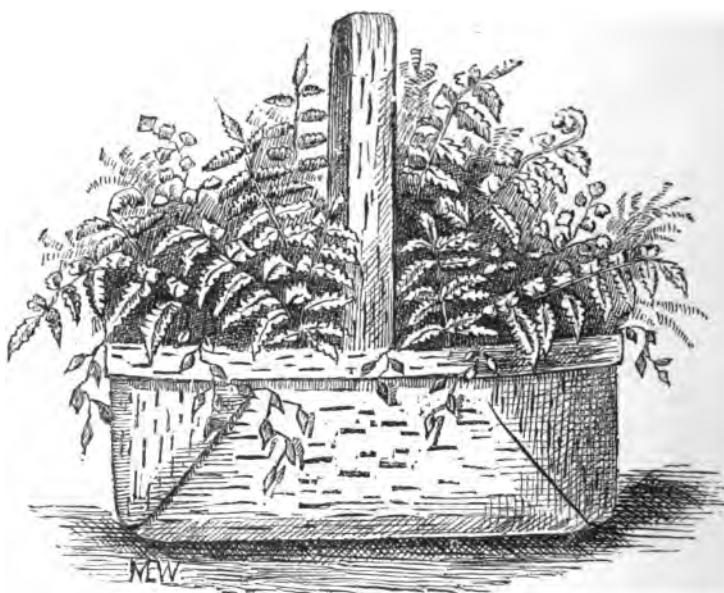


Rockery and Ferns.

nicely with only the shade of the house and what water nature supplies, unless during a long dry spell. I give them the waste water on wash-days. I have had some of my ferns for over five years, and they are just as nice as ever."

A rustic basket is very suitable for the in-door cultivation of ferns, and a simple one of birch bark is as pretty as any. Select a nicely marked piece, from three quarters to a

yard square, as this size will show the large ferns to good advantage. A slit of five or six inches should be cut in each corner, running bias toward the center, then lap the edges of each slit, and sew them through several times with waxed thread. A narrow band of bark should be neatly fastened around the upper edge, to make it firm, and, with



Birch Basket for Ferns.

the addition of a long strip three or four inches wide for the handle, the basket is complete.

The same soil may be used as that for growing ferns in the bed ; and the evergreen fern, the maiden-hair, and the large feathery fern will all do well in this receptacle, while the partridge and other vines may trail over the edges and up the handle on either side. This basket may be placed

on a table in the window or in a corner, and with daily air and watering it will remain green and beautiful in-doors until removed to its summer quarters.

Open wire baskets and open baskets of wood, lined with moss and filled with ferns, are very ornamental as hanging-baskets, and among the ferns which are most desirable for this purpose are the *lygodiums*, *adiantums*, *nephrolepis*, *aspleniums*, etc. The singular branching species known as *platycerium*, or stag's-horn fern, is very effective in a hanging-basket.

Cut ferns may be kept fresh all winter by packing them in a barrel, with a layer of earth at the bottom, then a layer of ferns, then a light layer of earth, and so on until the barrel is filled. They are always beautiful with flowers, and a basket or glass, arranged with them in wet sand, can be had at any time as a table ornament when there is a barrel in the cellar to draw upon.

Ferns dry naturally and readily, and are often so arranged with moss and other plants as to look like the living plants. They can be pressed between sheets of common blotting-paper or newspaper, secured between deal boards half an inch thick, a foot wide, and a foot and a half long. Two narrow strong straps, drawn as tightly as possible, will afford the necessary pressure.

It is advised, in gathering the ferns, that the stems be as long as possible, and each frond, when laid between the papers, should be placed in its natural position. The paper should be changed two or three times a week, to keep the ferns quite dry, and in two or three weeks they will be fit for use.

VIII.

CITY GARDENS.

EVERY one does not leave the city in summer, and many who go spend only a few of the hottest weeks at the sea-shore or among the mountains, leaving a wide expanse of summer that, although passed between brick walls, is in many respects the most comfortable portion of it. The season is endured, however, rather than enjoyed, and one reason of this is that so little provision is made for any of the beauty that belongs to the time of leaf and flower; so few traps are laid to catch sunbeams that are ready to fall into the most carelessly spread snares.

The popular idea of summer in the city is represented by a palm-leaf fan and a pitcher of ice water, banks of greenness or buds and blossoms being generally regarded as utterly foreign to the situation. A city back yard is apt to be only a dismal trysting-place for cats, walled in with ugly fences and adorned with perpetual relays of wet clothes, while the front inclosure, with its stereotyped parallelograms of grass and monumental urn, suggests a well-kept grave. As a background to this, unclothed walls of brick fling back with savage force the fierce vertical rays of sunshine, and naked iron or stone railings shut in empty little balconies, admirably calculated to hold not only flowers that are lovely to the eye, but thickets of green, living sponges that absorb and diffuse a grateful moisture, peculiarly acceptable under an aspiring American thermometer with a passion for the nineties.

Sometimes, perhaps, on an exploring walk or car ride through the streets that have a sort of *terra incognita* within city limits, one comes unexpectedly upon some oasis in the general Sahara, a bower of greenness having, probably, an unobtrusive little house for a foundation, but with some trick of porch, or veranda, or trellised window, with clustering vines and blooming flowers, that photographs it at once on the memory and refreshes the summer pedestrian like a draught of country milk. Possibly the vines are only morning-glories and scarlet-runners, climbing-rose, or common woodbine, but they do their office of love, and cover with dewy, protecting arms the helpless walls through the long summer siege, and smile at the fiery sun that tries so hard to pierce the joints in their armor.

"I have seen," says some one, "a small house in a dusty street with a bit of garden in front; over its windows and doors pretty vines climbed, bright roses, marigolds, and honeysuckles lighted up the dark, sad cloud of poverty that hung about the place. Though they were of no economical value as food, drink, or clothing, they gladdened the minds of the laborers who passed to and fro from their work morning and night."

That is just it. A city garden gladdens the eyes of so many besides its owners, and we recall vividly the surprise of beauty from a wide, gracious-looking mansion in the suburbs, the second-story balcony of which was fringed with a continuous line of brilliant verbenas, blooming with the most generous prodigality, in narrow boxes placed just behind the stone ledge.

But, it is argued, some city fronts are so low and narrow and shaded, or rather the street on which they are situated is all three of these, that anything like plant cultivation is altogether out of the question, as nothing could possibly thrive in such a cheerless situation. Even with these drawbacks, however, one need not despair, and green

leaves, at least (which are more acceptable than brick walls, any day), may be aimed at successfully. The long-suffering ivy will not resent even these forbidding condi-



Window-Ivy.

tions, and the balcony or window-box may be wreathed with it as with a perpetual suit of Lincoln green, making an effective background for the few shy flowers that can be coaxed into bloom.

Of these, let it be remembered that pansies and lobelia delight in shade, likewise auriculas, daisies, and forget-me-nots. Hepatica, blue and rose-tinged, lily-of-the-valley, digitalis, mimulus, large-flowered, hypericum, nemophila, were all originally forest belles, whose city admirers would no longer permit them to blush unseen ; but their shy, country ways still cling to them, and the shadier their situation, the better they will thrive. Violets and periwinkle (trailing myrtle) also belong to this retiring sisterhood, and many others might be added to the list.

Ferns can always be depended on for these damp, sunless dooryards ; and when "money is no object," plants already in bloom can be transferred from the florist's grounds to the companionship of the ivies and ferns, and discarded for fresh ones as soon as their beauty wanes, thus forcing brightness and bloom into the dullest of inclosures.

Everything in the way of flowers is possible in a balcony looking to the east. Almost any blossoming vine may be used in place of ivy, and, with the aid of a hoop nailed to the top of the window-frame, it can be formed into a graceful arch. A basket, filled with trailing plants, suspended from the center of this arch, will add to the beauty of the general effect. Here flowers will bloom from the beginning of the season to the very end, and a western exposure is equally good. But when the front looks directly south, the balcony is converted into a natural hot-house, and needs shading. This may be accomplished by an awning, or a plank inside, which, with its edge touching the floor and reaching as high as the tops of the tallest plants, will protect the roots from the summer heat.

Where there is no balcony there may be window-boxes, and these are ornamental in their simplest forms. With delicate vines hanging, fringe-like, from their edges, and more substantial climbers wreathing the windows, a little bloom will go a great way. The plant boxes should be

about two feet in depth and width, and as much longer than the window as can be easily reached from side to side. Into the box should go, first of all, six inches of broken rock or stone for drainage; then three inches of broken bones and leather; over this, a rich, light loam. On the

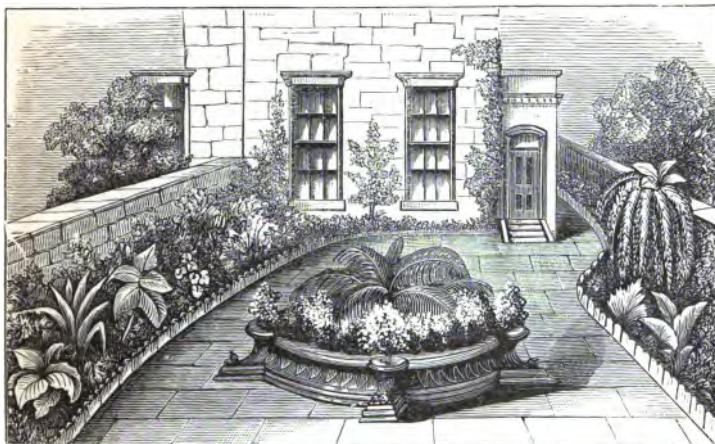


Window-Box.

front edge may be planted with good effect verbenas, thunbergia, gilia, mignonette, and maurandia, with its delicate hanging tendrils.

The little plot of ground between the house and the street, called indiscriminately "courtyard" and "area," even when scarcely more than a yard in depth, is capable of results in the way of gardening that would never be dreamed of by those who make no more ambitious attempt than a crop of grass. Sometimes the area is large enough for the cultivation of shrubs and small trees, and with careful pruning these can easily be kept within bounds, but it is always large enough for vines and window-boxes.

There are many plants, too, usually treated as shrubs, which can be trained upon walls like *espaliered* fruit ; among these, the *cydonia Japonica*, with its rich coral blossoms in spring and dark-green leaves in summer, is particularly effective. Planted unobtrusively at the corner of a fence, it will branch right and left, and form a sort of hedge no less beautiful than novel. Many of the evergreen shrubs, and especially the new variegated kinds, will do admirably on the shady side of the street. Rhododendrons, kalmias, and,



An English Court-yard.

with some amount of space, *pinus cembra*, *ilex laurifolia*, American holly, andromedas, juniper, etc., would abundantly repay the cultivation.

In English cities and towns, these little contracted front yards are made into blooming Edens, sometimes not more than twenty feet square. With neat edging tiles for the narrow side beds, and a raised parterre in the center crowned by some graceful shrub or foliage plant, and the English brick walls covered with climbers, "the entrance

court" forms an ornamental introduction to some cozy box of a house that has at least the outside air of being inhabited by people of taste.

A suggestion has been made (but not, we believe, ever carried out) that in a row of houses the proprietor of each little court-yard should give the whole of his mind (and space) to the cultivation of some particular flower or plant, and with lilies in one inclosure, roses in another, verbenas in a third, gladioli in a fourth, and so on through the list. The effect would be that of different flower beds in a large garden, and less patchworky than a variety in a small space. Flowers could be exchanged, and bouquets for the house would thus be more satisfactory and in greater profusion.

With a row of houses thirty feet front and standing thirty feet back from the street, the space afforded would be ample for the exercise of much floricultural taste; and wire fences between the inclosures, as also those at the front, could be entirely covered with vines and made beautiful with leaves and buds and blossoms.

In a plan arranged for these larger houses, the paths slant, and the patterns in the different fronts join like the breadths of a carpet. The center piece in one should be oval, in another round, a third star-shaped, a fourth octagonal, a fifth heart-shaped, etc. Small deciduous trees, like the *chionanthus*, or fringe-tree, the *cornus Florida*, *Halesia*, or silver bell, cranberry-tree, snowball, magnolia, and others would be desirable in a space of this size.

The same idea could be carried out advantageously in rows of smaller houses, if care were used in the selection of plants suitable for a small space. Such beds of pansies, for instance, as might flourish in shaded city door yards! Such fuchsias and forget-me-nots and violets and lilies as might take the place of the rank grass or hopeless-looking pavement that usually stretches from door to door! The

little country towns have the advantage here, their front yards being generally ornamental ; and in one small city that we wot of there are recesses over the entrance doors filled with plants and hanging baskets, and draped with flowering vines. These little wayside conservatories are a perfect blessing to the passers-by, and with generous watering they can be kept fresh and beautiful through the entire season.

Do you know, O reader ! the possibilities of a city back yard ?—a back yard even with dingy fences and undesirable neighborhood ? Do you know that ugliness and disagreeables can be *planted out* ? that English ivy and Virginia-creeper will throw a green veil of charity over the most hideous chimney pots and offensive walls ? Shrubbery, to be sure, can not be planted to any great extent by reason of clothes-lines, but grape-vines can, and also fruit of various kinds on *espaliers*. The highest fences and the thickest surrounding houses may be laughed to scorn in this style of cultivation, and enterprising people have actually managed to take prizes for fruit raised in this way. They probably belonged to the class who always find four-leaved clovers, possibly seven-leaved ones, but their success, even if exceptional, proves that there is more in city yards than is dreamed of in ordinary philosophy.

The best arrangement for a city garden is to begin with a background of ivy on the fence, planted about two feet apart, while the whole of the ground might be occupied by a grass plot, with the exception of a border from two to four feet wide, according to the space and with a due regard for clothes-lines. This border could be planted with two or three continuous rows of well-contrasted flowers up to the ivy background, but it should extend on three sides only. A large rustic vase might occupy the center of the grass plot, with, perhaps, a smaller one on either side, and

these should be filled with not more than two or three different kinds of flowers.

Under the common mistake that all the colors of the rainbow and all the plants in the florist's calendar are desirable in one vase, these garden ornaments too often resemble gigantic bouquets; but, with an harmonious combination of two or three colors only, the result is much more pleasing. Among particularly happy combinations is the old Tom Thumb pelargonium for the center, with an edging of *saponaria Calabrica*, the effect of orange-scarlet, with the trailing pink tresses and delicate green, being both pretty and uncommon. A wreath of dark, velvety pansies on the edge, with white and pink geraniums in the center, is also lovely, as well as lobelia with rose-scarlet or deep-toned pink edged with silver-leaf foliage. There is no end to the variety to choose from. All that is wanting seems to be the gift of arrangement.

Next to the house should be at least three feet of gravel or pavement, and the farthest part of the border facing the house might be wider than on the other sides, with more flowers and a background of low shrubs. This would give a very pleasant view from the back windows, between the flowers that should adorn the windows drooping low over the outer ledges. Crimson-velvet petunias and thunbergias, with their buff-colored petals and black centers, combine very charmingly for this purpose.

City gardening may be carried up to the very roof, scattering on the way a vine or two in the vestibule, a wall pocket of ferns perhaps, and possibly a rustic stand or French *jardinière*.

It has been said that we make so little of the waste space on the tops of our houses, constantly fanned by the most healthful breezes, and that for three months of the year, at least, it should be the popular family resort. On the continent of Europe, and especially among the Germans,

roof gardening is quite common, and, with such unbroken table-lands as most of our city house-tops present, there appears to be no serious obstacle to brilliant success. A roof garden has the peculiar advantage of being well out of the way of thievish hands.

The roof of an L or back building, which is attached to many houses, is the most favorable for this experiment, and more easily reached for work or enjoyment. It may be converted either into a garden or a greenhouse with the most gratifying results. In the latter case, it could easily be heated in winter from the kitchen range or the furnace. A shed only twenty feet by fifteen would be sufficient for a large collection of flowering plants, a cold grapeviny, or a cold peach house—almost any fruit, indeed, that might be desired. If a garden only is aimed at, the roof must be made strong enough to bear the pressure. A bottom should then be laid of coarse materials for drainage, filling up with compost.

The roof garden is only a window-box on a mammoth scale, and everything of the vegetable, flower, or fruit order can be made to grow as well here as on the ground. The arrangement must depend on the shape and size of the roof, and its peculiar exposure. Long, narrow wooden boxes, placed just inside the ledge or railing, may be used for plants, instead of the bare roof. These can be painted a dull red, and filled with good garden earth mixed with manure. They can be managed exactly like a flower border. Wistaria and Virginia-creeper, planted at each end, may be trained to unite across the front, forming, with the delicate blossoms and richly tinted leaves, perfect representations of spring and autumn. The generous foliage of both these vines will sufficiently shade the smaller plants in the boxes.

In an inclosure of this kind thirty feet by fifteen, which was outside the windows of a drawing-room on the second floor, and bounded on all sides by chimney pots, there were more than sixty boxes, some of which had been in use over

ten years. The walls were entirely covered with ivies, planted either in casks or in square boxes about eighteen inches high. There were at least a dozen ivies that locked arms as they grew, and made the circuit complete. One side of the outlook, being uglier and more conspicuous than the remainder, was fitted with a slight wooden scaffolding, painted green, twelve feet high in the center, with side pieces attached to the walls and upright laths nailed to the garden boxes below. Ivy did the rest by covering the scaffolding so closely that nothing else was visible.

Boxes for roof gardening should be made of the strongest wood, and several small ones are preferable to one large one. Blocks must be placed underneath to prevent the wood from resting on the lead or stone, and a fresh coat of paint once a year is a great improvement. A thorough tarring inside will also make them more durable. The bottom of each box should have six or eight holes for the escape of superfluous water, and a layer of broken pottery should be put in before they are filled with earth. Boxes are recommended, instead of flower pots, because the latter would soon be roasted on a roof. To keep them in good condition, the soil should be entirely changed every two years, or partially so every spring.

A very pretty arrangement for a terrace garden is to begin with a roof, which can be formed of some quickly growing climber supported by trellis work on a central column of wood. This might pass through a round table, which could be used for books or work. If the roof is over an L, one side will be occupied by the wall of the house with doors and windows opening upon it. Each end may be arched by a trellis work of wood or wire covered with vines, and the inevitable hanging-basket suspended from the center. A row of boxes on the inner edge of the balustrade will contain such plants and vines as are best suited to that particular exposure. The corners may be

beautified with honeysuckle, clematis, roses, wistaria, and Virginia-creeper. Such a garden requires watering two or three times a day, and especially if the roof is of metal, which reflects heat powerfully.

Even fruit may be raised in this way, and many kinds are extremely ornamental. Grape-vines especially flourish. They can be bought trimmed and ready for bearing, and should be placed at the foot of the posts supporting the arches of the terraced arbor. This will provide them with a suitable support and the most favorable situation. They may be trained to grow in festoons, which are exceedingly ornamental. The grapes will appear in due time within easy reach of one's hand, and hanging in clusters of beautiful purple bloom all the way down from the center of the arches to the base of the pillars.

There should be four vines in all—one at each corner—and, to have the fruit in perfection, the top of the vine must be cut off as soon as the young grapes are as large as a pea, and the grapes must be thinned out when very thick in a bunch. When too many are left to ripen, they crowd each other, and the light can not get to them at all. Some very careful cultivators cut out with a pair of scissors one grape in every three. The leaves, too, should be trimmed off about a month before the grapes are gathered, removing every one that prevents the sun from striking directly on the fruit.

Dwarf cherries and plums will bloom abundantly on the terrace, if cultivated in large boxes, and a white and red currant bush and three or four raspberry plants will be desirable additions.

A terrace garden is a much more agreeable prospect from one's back or side windows than a dreary metal roof, and such a garden can be carried on with so little comparative trouble that it is a source of wonder why it should be so generally looked upon as an unattainable castle in the air.

IX.

HOUSE PLANTS.

VERY few houses are without something in the shape of a plant during the winter, from the soap box of stubby geraniums in Aunt Chloe's kitchen window to the well-appointed conservatory of the handsome city dwelling. It is not an easy matter for the lover of flowers to give them up with the first frost until the next May, and so house plants are attempted, under all sorts of unfavorable conditions, with the fond delusion that a heated room will impose itself upon them as a summer atmosphere, and bring forth buds and blossoms as a natural consequence.

Tall, overgrown plants, that have faithfully done their duty all summer in the way of spreading and blossoming, are brought at once from natural to artificial heat, and expected to go on being things of beauty and joys, in spite of the shock to their system of being transplanted, in addition to the hard work they have been doing all summer, and the result is a miserable-looking set of spindling plants, that drop their leaves, and take up all the windows, and are in everybody's way. Had they been partially cut down in proper season, or taken up bodily by the roots and hung by the neck in the cellar, not until they were dead, but to gain needed rest for a new life in the spring, they would have emerged in better shape.

Preparations for house plants in winter must be made during the previous spring and summer; and proper soil, a

moderate amount of heat, sun, and moisture, are absolute essentials to their successful culture. These conditions should be as carefully observed with one plant as with a hundred ; as a single pot or basket in good order with healthy-looking green leaves, even if without blossoms, is a much more agreeable sight than a consumptive window garden.

No plants should have as much heat at night as they have during the day, from ten to twenty degrees being the proper difference in temperature. "Plants, like the animals, sleep or rest at night, and neither rest nor sleep well in a temperature such as they require in the daytime. *The less light, the less heat consistent with the nature of the plant, is a safe rule to go by.*"

On the other hand, plants in a room where there is no heat at night, and in an exposed situation, are in danger of freezing. This can generally be avoided by protecting them with newspapers, which should be so arranged as to keep out all draughts from the windows. Double curtains may be made by tacking them together at the edges, and these by being placed between the window and the plants in very cold weather, day as well as night, will effectually keep out the frost.

Another plan to protect plants at night is to place them, before the room has become cool, in a compact form on the floor or the table, and then encircle them with a stiff board paper, such as is used for building purposes, of sufficient width to inclose the plants, making a top of the same material, or covering with carpets and blankets, also laying cloths around the lower edge of the paper. Shielded in this way, the plants will remain unharmed when water freezes in the room.

Although ventilation is very desirable, plants should never be aired in winter by letting a draught blow on them, or over them, even on mild days, as this is always an injury, and sometimes a fatal one.

Again, sawdust is highly recommended to keep plants without a fire at night, and for this arrangement a tray of wood or zinc is needed of any convenient size and about four inches deep. It should be water-tight, and have a handle at each end. Paint outside and in, put in each corner a post as high as the tallest plant, and it is ready for use. The flower-pots are to be placed in this and filled between with sawdust ; this absorbs the moisture falling from the plants when they are watered, and retains the warmth acquired during the day, keeping the temperature of the roots even. At night a blanket or shawl should be spread over the posts, and they are safe from freezing. The tray is convenient to move about, and is ornamental on a stand or table.

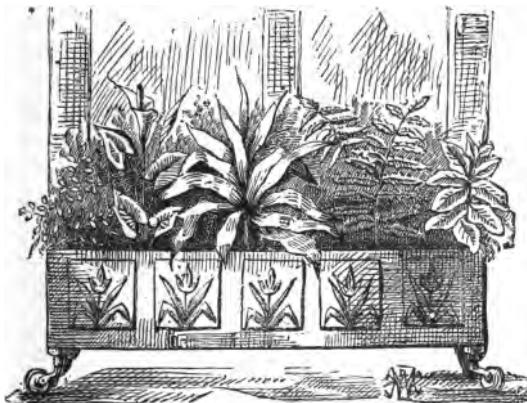
The morning sun is the great invigorator in the way of growth and bloom and a healthy appearance generally, and only plants that love the shade will prove at all satisfactory without this tonic. "All the exposures for plants that vary from the east to the west, and even a little to the northwest, may be included as available for window culture. The east and south, with the exposures between them, are of course the best, but western windows, and those even somewhat to the northwest, have been used with much success. A northern window is useful chiefly for ferns, colens, some fuchsias, and to winter shade-loving plants."

Among the lists given for various exposures, the following may be found useful :

For an eastern, or from that to a southern exposure, may be cultivated bonvardias, bulbs, *zonale* geraniums, *cactus*, *hoa* or wax plant, *begonia* (winter-blooming), *oxalis*, *valotta*, *linum trigynum*, lily-of-the-valley, *salvia*, *pelargonium* ; leaf plants : *aspedistra*, *folia variegata*, *maurandia*, *nierembergia*, *amaryllis*, *narcissus*, *lantana ipomea*, *bridal rose*, *Cobaea scandens*, sweet-scented geraniums, and some others.

For sunny windows with wood fire (or probably any heat under modified circumstances) : abutilon, roses, ixia, iris, calla, oxalis rosea, alba and yellow, hyacinths, yellow flax, passion-vine, cyclamen ; leaf plants : azalea, cineraria, lily auratum, daphne, Chinese primrose, heliotrope, tropaeolum, jessamine, mahernia, etc.

In western windows, with dry heat, may be grown amaryllis, calla, zonale geraniums, cineraria, heliotrope, fuchsias, vinca, wax plant, cactus, German ivy, winter-blooming pinks, aspedistra variegata, escheveria, etc.



Window-Box.

Western windows, with little heat, are favorable to fuchsias, zonale geraniums, Chinese primrose, vinca, pansies, pinks, lily-of-the-valley, ixia, sparaxis, tritoma, tulip, hyacinth, scilla, lily, rose-geranium, heliotrope.

It will be noticed that some of these plants flourish in all the exposures named, but it is desirable to know *which* ones, and the number given is sufficient to supply any window garden or small greenhouse.

Moisture is one of the most important considerations

for house plants, as the dry air of the average "living-room" is fatal to bloom and beauty. A geranium or two in an ordinary kitchen generally has greener leaves and a richer show of blossoms than the plants in more luxurious quarters, for the simple reason that the steam of cooking supplies the moisture needed, and the constantly opened door (and often window) the proper ventilation.

Ingenious devices are sometimes resorted to for the necessary moisture, and among these a very simple one is to suspend a large sponge (or two of them, if there are many plants) in the window and keep it constantly wet. A successful cultivator of house plants says: "I steam my plants quite often. I heat several stones or bricks very hot in the stove, take them out in an old wooden pail" (would not *tin* be better?), "set it in the room, pour on a quart of boiling water, and drop the curtain. The dampness is just what the plants like, but the insects do not."

A few plants placed in a box, like the one described for sawdust, and filled in with damp moss or wet sand, could probably be kept moist enough to make the green leaves beautifully fresh and the flower petals rich in hue.

The watering of house plants *seems* easy enough, but in reality it is a very important and delicate operation, and inexperienced growers are given to deluging their pots much more than is necessary. Some plants require a great deal of water and others very little, and some atmospheres are dryer than others and call for more water in proportion. To water *all* plants at stated times, when some of them have come from the river's edge and some from the sandy interior, is anything but a judicious plan, as constant saturation decays the roots of the latter, at the same time that an insufficient supply of water wilts and shrivels the leaves of the former.

To ascertain the needs of any plant in this respect, it is only necessary to rap on the side of the pot: a hollow,

ringing sound in reply is a cry for water, while a dull, heavy sound indicates that the plant is not thirsty.

A thorough watering in which the ball is completely soaked is the only beneficial one, as a slight wetting of the top earth does little or no good. Most plants in winter do not require watering more than two or three times a week (while in summer they need it daily), but this, as stated before, depends in a great measure on the nature of the plant and the condition of the atmosphere. Plants in bud or blossom also require more frequent watering than those in a state of comparative rest.

Cold water should never be used, unless the plant is frozen, when it will be found the best of restoratives ; tepid water, which is about the temperature of the atmosphere, being best even in summer, and it should be applied in as fine a spray as possible, a fine shower being more like nature than a steady pour. Once a week the leaves of all house plants should have a thorough washing, and an atomizer will be found excellent for this purpose. The proper time of day for watering is whenever the plants need it, but it should not be done when the sun is shining on them.

Liquid manures should be used with great care, but, when judiciously applied, they are valuable aids in cultivation. The solution of parings of horses' hoofs, mentioned on page 19, is a particularly valuable one, but, as this can not always be obtained, others will be found to answer the purpose very well : about a teaspoonful of guano in a quart of water, used only as the plant requires watering ; weak glue-water and liquid ammonia are also good—ten drops of the latter to a quart of water.

An old cultivator recommends, as a compost for pot plants, one third leaf mold, one third rich loam, one third river sand ; mix these materials well together, and to every bushel or thereabouts (for there is no need of special care), about a shovelful of lime, ashes, or gypsum. “ The earth

in which we put plants may be considered in the light of a sponge which shall absorb, retain, and give out the food the plant needs to facilitate its perfect development. The essentials, therefore, are a carbonaceous character, as carbonaceous materials are sponges for the absorption of the nutritious gases, a loose and porous mechanical texture which will allow the water applied to percolate readily to the fibrous roots of the plants, and then to drain away quickly if it be in excess, and a due supply of those minerals usually called salts, such as lime, potash, soda, etc., which in small but distinct amounts are all important to the formation of healthy vegetable tissue."

The pots for house plants should not be too large. Those of contracted dimensions will insure more bloom, and make a stronger, more compact plant. A plant to be forced is always placed in what seems like a receptacle of insufficient size. The soil for potting should not be moist, but friable, and the pot washed inside and out, and well dried before using it. The placing of broken pieces of pot in the bottom for drainage is open to the objection of stopping up the hole, and it is recommended instead to open the hole, when it becomes clogged, with a knife or a sharp stick.

A pot should never be filled to the edge with soil, as it is neater and more convenient, for watering and other purposes, to leave a space of about an inch. Care should also be taken not to pile the earth, after the fashion of some amateurs, around the neck of the plant, as this is injurious to most plants, and is never done by florists.

One of the most popular house plants, next to the rose and the geranium, is the fuchsia, known in olden times, from its graceful, hanging blossoms, as "lady's eardrop." It is quite hardy, not requiring much heat, and will even bear a little frost without injury, but, for its best condition of leaf and flower, a temperature of sixty degrees is neces-

sary, with plenty of light and air. Good, rich soil is essential, with a moist atmosphere. It is very easily raised from slips, which may be planted at any time of year, and the plant can either be trained on a small trellis or made of a broader shape by pinching off the terminal shoot until side branches are put out.

“The fuchsia is very liable to loss in leaves. This nakedness is caused either by too poor soil or the presence of the red spider. These minute insects are kept down by an occasional syringing of the plant, which is then dusted with sulphur. When it arises from poverty of the soil, a top dressing of manure or repotting is the remedy. Whenever there is any appearance of yellowness in the lower leaves, it is time to attend to these matters.”

This plant needs plenty of root room and plenty of water. A little soot sprinkled occasionally on top of the soil, or a tablespoonful of lime and soda in a pint of warm water, will be found beneficial to its good looks and its growth.

There are many different kinds of fuchsias. *Speciosa* is a fine winter-blooming variety, with very large flowers, having a crimson corolla and outer petals of a delicate peach-blossom hue. It blooms profusely when well taken care of, and is seen in most collections of winter plants.

The heliotrope is also a great favorite, not only for summer blooming in the garden, but for the house as well. Its delicate flowers, of various shades of blue-purple, and its delicious vanilla odor, make it very desirable for bouquets. It grows from cuttings as readily as the fuchsia, but the old plants bloom more profusely than the young ones. As its name implies, it likes plenty of sun and a good, loamy soil. This plant needs a great deal of water, and is particularly susceptible to frost.

The begonia is a beautifully foliaged plant, its green leaves alone making it sufficiently ornamental ; but it has, in

addition, profuse waxy flowers of scarlet, pink, and white. The variety known as *begonia rex* has immense leaves tinged with crimson, and ornamented with blotches of green and white and zones of silver. *Fuchsiodes*, *Saundersonii*, *parviflora*, and *erecta multiflora*, are good bloomers, with beautifully cut drooping green leaves, but *rex* is by far the richest variety.

The begonia requires constant heat—from sixty to seventy-five degrees—and considerable moisture. The leaves should not be allowed to touch a cold window pane.

Bouvardias will also flower freely with proper care, bearing generous clusters of rose, crimson, scarlet, and white flowers, and beginning to bloom when only three or four inches high. They are easily raised from cuttings, and require about the same treatment as the heliotrope. *Jasminoides* has pure white, fragrant flowers; *elegans*, salmon scarlet. *B. Davisonii* is an extra fine white variety.

Mignonette, though humble, is not to be despised, and an ornamental window-box filled only with this low-growing, violet-scented annual is a desirable addition to any room. “A pot of mignonette and another of sweet alyssum cost nothing, and yet few things will be found more pleasant and attractive in the winter season. Plants that appear unimportant, almost insignificant, and entirely eclipsed by more ambitious rivals, when the garden is ablaze with its summer glory, sometimes prove to be very queens of beauty when transferred to the sitting-room or the bay window.”

As late as September will answer for sowing seeds of these plants for winter blooming, and from three to six plants may be put in one pot.

Among simple floral ornaments for a winter room, few are more satisfactory than an old glass globe on a large plate treated as follows: a small pot or can filled with earth is placed inside the globe, and ivy and *tradescanthe*

are planted in it. Green moss from the nearest swamp is then put around the globe and all over the plate. Lastly,



Hanging-Basket with Sieve.

the whole is thoroughly wet and sprinkled with grass seed, and before long it will be a mass of velvety verdure.

Almost everything that will hold earth and a plant or two has been converted into a hanging-basket, and these air gardens, when kept in good condition, are very charming. The ivies will all grow in them, and almost any climbing plant, while a dwarf geranium, a begonia, or a petunia makes a very desirable center plant. Indeed, the petunia will fill a basket of itself, and one of the small-flowered kind, with rose-colored blossoms, or white blotched with carmine, will make a constant wealth of bloom in a sunny window, while its trailing habit renders it very suitable for basket cultivation.

A solid receptacle of any kind filled with wet sand will grow a sweet-potato nicely, and the vine, with its pretty foliage and quickly climbing habit, is a general favorite wherever it is known.

The sweet pea, too, has been successfully cultivated in a hanging-basket, and the *convolvulus Mauritanicus*, a beautiful morning-glory, with pink and blue flowers, having a white star in the center, will grow and blossom equally well.

Ferns and ivy mingled will fill a hanging-basket very prettily, but the ivy for this purpose should be the small-leaved kind, which sends forth graceful, compact sprays to twine around the wires by which the basket is suspended and to droop over the edges. A very good effect is produced with pressed ferns and the ivy growing in bottles of water. One or two ounce phials are used, and wrapped around with cotton to keep them firm and prevent them from jarring each other.

Some one says, in regard to watering hanging-baskets : "The addition of a sieve above the basket is an ingenious idea. This arrangement would add to the beauty of the structure, and furnish the means of watering the basket more evenly. A light soil could be placed in the upper receptacle and sown freely with canary seed, and water used



abundantly. This will percolate slowly, and distribute itself properly to the plants beneath."

Hanging baskets require frequent watering, for which, with due regard to the carpet beneath, they have to be taken down from their perches, and then suspended somewhere else to dry ; but this trouble may be avoided in another ingenious way, which is to fill a bottle with water and put in two pieces of yarn, leaving one end of each piece outside. The bottle should be suspended just above the basket and the water allowed to drip, which will keep the earth moist enough for winter.

A wall pocket filled with wood treasures is more uncommon than a hanging-basket, and quite as ornamental. A thin board cut in the shape of a shield forms the back, and besides a hole in the middle of the top, to suspend it from a nail, small holes should be bored all around the edge, about half an inch apart. The pocket is made with ordinary brass or white wire, which is passed through the holes from side to side and carefully fastened at each end. The same process is repeated from top to bottom of the shield, and the wires fastened together.

The receptacle is then lined with mosses and filled with wood earth, and pipsissiway, arbutus, wintergreen, hepatica, etc., mingled with ferns, will all take kindly to these novel quarters, if kept constantly moist.

MINIATURE GREENHOUSES.

GREENHOUSE is a comprehensive term, and may mean a pretentious edifice partly of glass, heated with pipes, and filled with flourishing plants, or it may mean only a bit of "imprisoned summer," of which a writer says: "I take a common-sized soup plate and place in the bottom a layer of pounded charcoal, over which I place the mold which I bring from the woods, then a layer of green moss, and the ferns and plants. I sprinkle it well, and cover with a ten-inch glass, and I have 'imprisoned summer' all the year round."

This is a Wardian case on a small scale, but certainly more imposing than the first one, which consisted of a raised-by-accident fern and a grass grown on a moldy chrysalis in a glass bottle. The Wardian case proper is really a small greenhouse, with the advantage of being movable; and is intended to secure moisture to its inhabitants and to protect them from dust. It is no longer considered indispensable to have it air-tight, as in the original.

All sizes and shapes of Wardian cases are to be seen. Small ones can be made at home with large panes of glass and an old tray or a piece of wood for the base, and very elaborate ones can be bought for a large sum of money. The most satisfactory one, perhaps, is of moderate size, with a base of pottery and a neat table to support it, and this

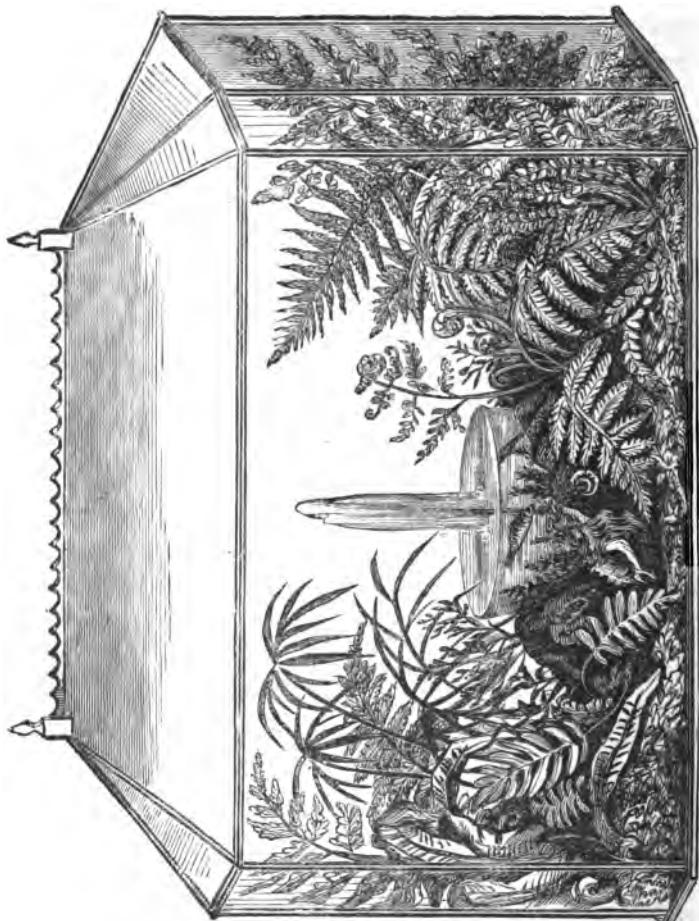
can be obtained for a sum that will come within the limits of a light purse. It must be large enough not to crowd the plants that are put in it, or the plants must be few enough not to crowd each other, as a case with too many occupants can not flourish.

Many pretty growths from the woods may be cultivated in a Wardian case of generous dimensions, and made to bloom a couple of months earlier than they otherwise would. Trailing arbutus delights in it, and who does not delight in trailing arbutus? It should be transplanted in October when the buds are formed, and will bloom under this mode of culture in February or sooner. The pretty little partridge-vine, with its tiny evergreen leaves and vivid berries, like coals of fire, fairly revels in moisture, and does its best and prettiest in the Wardian case. The pure, snowy-looking blood-root (*sanguinaria Canadensis*) should also find a place here, for "though the sanguinaria can not be considered a showy plant, it has few equals in point of delicacy and singularity. Hepatica, too, with its pretty white and purplish-blue blossoms and clumps of heart-shaped leaves, will mistake January or February for April in the warmth and moisture of a glass residence. Many others, with all the mosses (and especially the greenhouse lycopodium), will do well.

One of the prettiest of Wardian cases is made of an oblong shape, half octagon, and filled with the different varieties of ferns, gracefully arranged, the taller ones at the sides, and the low-growing varieties in front. In the center is a miniature fountain (requiring a convenient water-pipe), which is both ornamental and useful, as its constant spray keeps up the moisture in which ferns delight.

An aquarium, which affords conveniences for animal life as well as for plant life, can also be made in various sizes and at various degrees of expense. A gallon or two-gallon glass jar, without the cover, can be used for a small

aquarium, or a large glass globe for a tiny one, accommodating a single fish.



Fernery with Fountain.

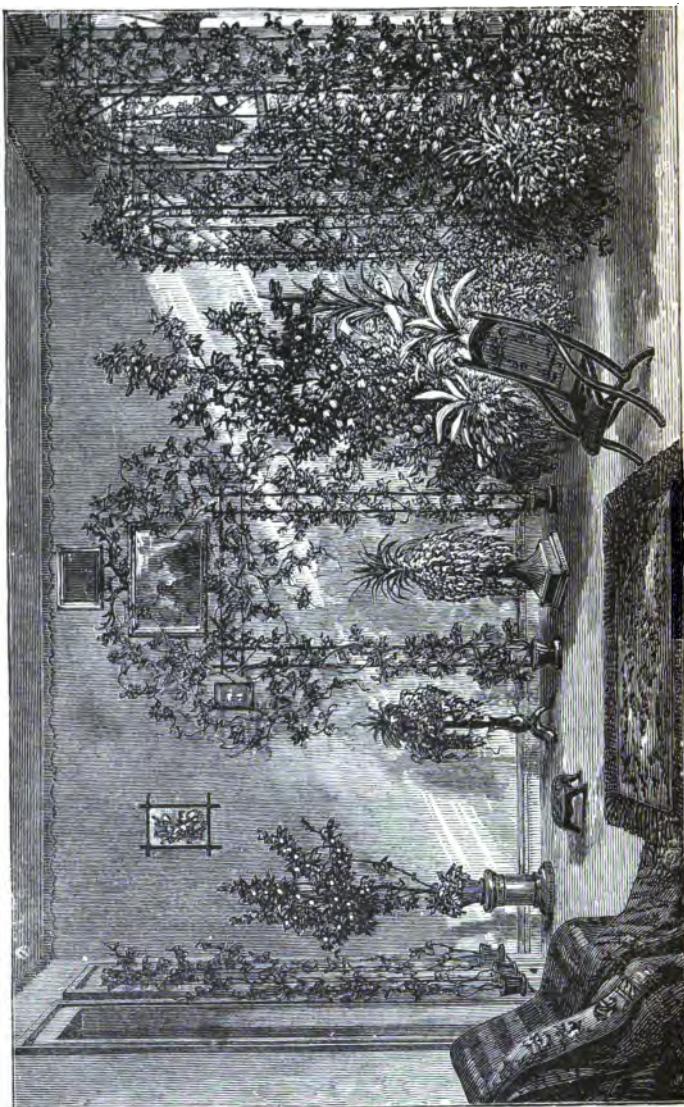
A writer gives the following directions for a home-made aquarium, which are both practical and economical: "I

purchased four panes of ordinary window glass, which cost me one dollar. Two of these panes were 12×16 and two 16×26 . I got a carpenter to make a substantial walnut frame, with an oaken bottom and furnished with small grooves for the glass, which I inserted, and cemented with the following preparation that cost just forty cents. One part (by measure) of litharge, one part plaster of Paris, one part fine beach sand, one third part of finely powdered resin. Mix well, and make into a putty with good boiled linseed oil. It will stand water at once."

Handsome tanks are made of iron, with the glass fitted in at the sides ; but, whatever the outside may be, the first process for the inside is to spread an inch of clean, coarse gravel, with all the sand washed out of it, over the bottom. It should then be filled within an inch or two of the top with clean rain or river water, and plants are required to keep this water pure and clean. They may be of any kind that grows quite under the water, although the calla lily often does well in an aquarium, and is very ornamental. Tape-grass and eel-grass are very commonly used. The plants must be pulled very carefully from their native bed, and washed perfectly clean ; they are then sunk by means of a small stone tied to the root, and this is all the planting they require.

Before the animals are put in, it is advisable to shade the aquarium for two or three days that the plants may become firmly established. Very few fish in proportion to the size of the tank should be introduced, as they require more oxygen than the small water animals, and overcrowding produces very serious effects. But lizards, snails, newts, etc., are needed to keep the water clear. A somewhat shaded position is better for the aquarium than a bright light.

The greenhouse proper is a structure outside of the house, or a building partly of glass standing by itself. A



A Green Spot in Winter.

room with long, sunny windows is sometimes used instead, and a very pretty greenhouse or window garden of this description may have an abundance of climbing or trailing plants in it, supported on light trellis work, growing from boxes on brackets.

The climbers may be *lophospermum*, Japanese woodbine, Madeira vine, *tradescantha*, and ivies of all kinds, while *vincas* and the lovely little Kenilworth ivy droop and trail. With the windows and walls festooned with vines, they form an effective background for such bloomers as geraniums, carnations, fuchsias, petunias, bouvardias, heliotropes, *eupatorium*, calla, *abutilon*, etc.

A low chair, a footstool, a rug, a divan with drapery and floods of sunshine, make an in-door greenhouse of this character a most attractive-looking lounging-place.

A home-made greenhouse that yielded a large amount of satisfaction is described as follows: "We had built this small lean-to at the south side of the kitchen, and opened a door from there into it. A small office stove and the heat from the cooking stove have been amply sufficient to keep therein an even temperature, as all the chips and small bits of wood were used in the daytime, and a fire of small coal put on about five o'clock in the afternoon in cold weather. The consequence has been that we have had fine thrifty plants, and a constant succession of bloom all winter; the Chinese primroses, geraniums, and others of that kind doing well in a cool bin at a distance from the fire, while our heliotropes and calla lilies blossomed just above the fire, and a stand, all the length, with five rows of shelves, gave extra heat and light to plants that needed them. Roses, red, yellow, and white, the rich Maréchal Neil and the ruddy James Sprunt, with many other sorts, have been a delight to us in many ways, while we have enjoyed the pleasure of giving away thirty-six bouquets during the long, dreary winter."

Another account is given of raising cuttings and seeds, for out-door planting in mild weather, in an old wash-boiler, placed in a sunny kitchen window, and resting on two inverted flower-pots. Old iron baking-pans, filled with clean creek sand, were placed across the boiler, which had



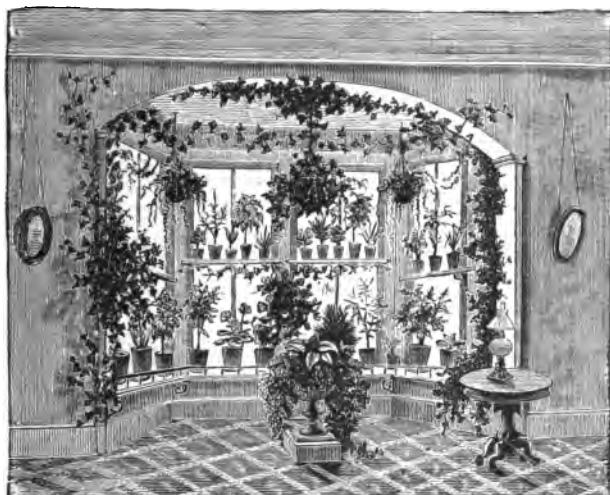
Small Window Garden.

been filled with water at about 90°. A safe kerosene lamp was lighted and placed under the boiler, and kept burning all the time, while cuttings and seeds were planted in the moistened sand above.

Early flowers and vegetables were thus raised with very

little trouble, and transferred at the proper growth to boxes of earth, when they were placed in other windows. The suggestion is offered for ornamental window boxes, arranged to hold water in the bottom and kept warm by concealed lamps.

An ordinary window may be turned into a greenhouse or a fernery with great success, and be made an ornamental addition to the outside of the house as well. Only strong,



Bay-Window with Plants and Vines.

well-grown plants of moderate size should be used, and, if filled with foliage plants alone, the result will be as gay and striking as that of a mass of flowers. Such a lovely group of ferns as the *pteris argyrea*, with long, white striped leaves, *peperomias*, the golden-green *peristrophe aurea*, maidenhair, sword fern, and the smaller varieties with a light, spreading vine, like *maurandia Barclayana*, would make such a window greenhouse beautiful exceedingly.

But a regular building, that is either a "lean-to" or a detached edifice, can be more frequently accomplished by people of moderate means than is generally supposed. The plans usually given for "cheap greenhouses" are quite appalling to a moderate purse, but plants will thrive so much better in an atmosphere devoted entirely to their needs, and there is so much enjoyment to be had from a small spot of greenery and bloom, when the outside world has donned its winter mantle, that it is worth while to consider the matter very carefully before deciding that a modest greenhouse is utterly impracticable except for those who can afford to spend money on showy luxuries.

A practical florist lately informed one of his customers, in answer to close questionings on the subject, that a diminutive greenhouse of the "lean-to" order, large enough to accommodate one hundred roses (the customer wanted it all in roses), could be built, without heating apparatus, for *twenty dollars*. A kerosene stove, of a new and improved pattern, with a tube for carrying off foul air, would heat such an apartment thoroughly at a cost of perhaps ten dollars more, and very little expense in the way of fuel. Does it not seem, from these statistics, as though many who are now without these winter gardens of delight *might* indulge in rosaries under glass?

It all depends upon good management and nice calculation. Second-hand sashes can be bought for considerably less than new ones, and if the building is created by degrees, securing a carpenter's services when he has little or nothing to do, the cost will be materially reduced. The ways of heating are various. A small stove of almost any kind will be sufficient for a tiny greenery, and it is to be remembered that, except for the tenderest exotics, too much heat is usually given, instead of too little.

Then, too, O sister of inadequate means! if, though on pleasure you are bent, you have a frugal mind, you can

make your greenhouse profitable as well as enjoyable, so that in a short time it will pay for itself. But the person who undertakes a small greenhouse, with so practical an end in view, will not dabble in a little of this and a little of that, nor waste her energies on "all sorts of insignificant little and big things because they are popular." She will carefully ascertain what plants are most productive of flowers that are *salable*, and shape her course accordingly. Roses, violets, bouvardias, carnations, all require nearly the same conditions of atmosphere, etc., and all are popular for winter bouquets. With geraniums and camellias, which will prove harmonious members of the same happy family, the greenhouse for profit will be found sufficiently stocked.

If built against the side of the dwelling, the expense of one wall will be avoided, and, with plenty of moss and easy growing vines, it can be made very green and pleasant to look upon. Try it, necessitous reader! It will be found far more pleasant and healthful than "sewing for one's friends," and, if you have to borrow the money to build it, you can be very sure of paying it back again. At the time of this writing, January, 1881, Maréchal Neil and Jacqueminot roses are selling at \$1 and \$2 a bud.

As to the greenhouse for pleasure, that may come as an unexpected fortune to those who had scarcely dreamed of indulging in such luxuries. It is a delight to linger over it. Do not buy the new parlor carpet on which you had decided, wear your last winter's sacque, bonnet, anything; do without desserts and give up preserving until it is a fact accomplished; put everything you can decently save into the "greenhouse fund," and you will enjoy the pleasant surprise of seeing it "roll up" like a snowball.

When, at length, you can sit under your vine, at least, if not under your fig-tree, in the storms of wild December, this is the sort of picture it will present; for *your* greenhouse is to be a summer bower in the midst of the winter

snows, and you will build it out accordingly without making it inordinately large or inordinately expensive. It



Rustic Stand for Plants.

opens, we will say, from the parlor or dining-room, as the case may be, and a passion-vine and hoyia (both beautiful), with some aid perhaps from ivies, make curtains and *portière*. A clump of oleanders in one corner, all glossy green and rosy pink, towers above a pile of Moorish cushions in which the colors are repeated, and in this luxurious and fragrant nest you enjoy the *dolce far niente* of your day, with Daisy, perhaps, in all the graceful abandon of her

twelve months of life, sprawling and gamboling on the mat at your feet, and your Sultan and slave growing rather misty and indistinct through the cloud of incense which he is wafting to himself from a censer that, to ordinary eyes, has the semblance of a fragrant Havana.

But tobacco-smoke, you know, is good for insects, or rather bad for them, and, therefore, highly favorable to your roses and geraniums, which, although not particularized, are supposed to be there.

For your greenhouse affords, at least, two comfortable seats, and, as you loll there amid the delicious Easter fragrance and feast your eyes with bloom and beauty, do you ever breathe a sigh of regret for the pies you did not eat and the bonnet you did not wear? I trow not.

The concluding paragraphs of this chapter, with some few alterations, are taken from an article by the writer in "Harper's Bazar."

MUCH IN LITTLE.

THE gift of knowing how to make the most of a small space, and of one's belongings generally, is particularly useful in all sorts of gardening operations, and an inexperienced beginner who has mastered this point is well on the road to success. A garden limit that is counted by rods can be made to do wonders with good management.

Nearly every owner of a suburban home, according to an old newspaper scrap, can enjoy the luxury of a choice fruit garden. If our laboring population appreciated the pleasure and comfort of such a garden, there are very few of this class, who own their homesteads, who would not have them. A garden seventy-five by fifty feet may be made to furnish an ordinary family nearly all the choice fruits in their season. In a space of this size may be set twelve standard pears, nine dwarf pears, six plum, ten dwarf apples, five peach-trees, six quince, six grape-vines, twelve gooseberries and currants, a fine bed of asparagus and one of strawberries, besides the various garden vegetables required by a family.

Such a garden, when once planted and provided with suitable walks, may be easily cultivated in the ordinary leisure of the morning and evening during the spring and summer months. With good tillage and careful pruning, the reward will in a few seasons be ample.

Many modest experiments can be successfully tried by

those who desire to find money in the garden as well as fruit and vegetables, and the confined limits of a single barrel have sometimes yielded rich returns. A lady writes to the "Floral Cabinet" :

"In a small yard, only large enough for flowers, I have succeeded in having a nice ornament and plenty of nice strawberries of my own cultivation. Take a common flour barrel, bore about fifty holes in it one inch large, set the barrel six inches in the ground, put in good rich dirt, set the roots with the stalk out through the hole, continuing in this way until the barrel is full. If the season is dry, water when you water your flowers. With care, you will have nice strawberries, the barrel will be perfectly covered with fruit, and as pretty an ornament as your yard can have."

Another excellent plan for raising strawberries in a small compass, and one that will insure a good profit, is to have a hotbed as long as one's space will permit and about eight feet wide. Moderate heat that will last the longest time is obtained by using equal parts of stable manure and forest leaves, and the soil itself should be very rich, six or eight inches deep. The plants are set out very carefully without disturbing the roots, about four to every square foot, the middle of January being the best time for early fruit.

After putting on the glass, according to an experienced cultivator, "they will start at once without drooping a particle, and make a surprisingly vigorous growth. They require careful attention as far as airing is concerned, and an occasional watering, unless there are plenty of warm rains in February and March, during which the sash can be pulled down."

Wilson's Albany is recommended for this style of cultivation, but Triomphe and Jocunda bear larger and sweeter berries. The fruit should be ready for gathering by the 1st of April.

The great expense of a hotbed is the glass, for which a much cheaper substitute may be found in white cotton cloth. This should be of close texture, and is prepared for use by painting it with a mixture composed of two ounces of lime-water, four ounces of linseed oil, and three ounces of fresh eggs. The eggs should be beaten separately, and added to the oil and lime-water after the latter two have been warmed and mixed together. The muslin should have coat after coat of this preparation until it is water-proof. If the frames are large, cross-bars a foot apart will support the cloth. This arrangement will cost only about a quarter as much as glass.

Early cucumbers can be raised very easily in a cask that is perfectly tight. One band should be removed, and the cask filled half full of stones, a good compost should then be filled in within a few inches of the top. Lattice work or brush should be arranged around the cask for the vines to run and spread on.

The great points in this novel method of raising cucumbers are watering and drainage. To accomplish the first, a pipe should be inserted in the barrel so that water may be introduced into the lower half until it rises to the soil. For the latter, holes may be bored to allow any surplus to flow off and not soak the earth. Keep plenty of water in the cask, and it will rise in the earth by capillary attraction.

Seed can be planted very early in this way, if protected by glass (or muslin), and it is said that a barrelful of cucumbers has been raised from one hill grown in this way.

An asparagus bed is a mine of wealth, in a small way, of which many people are ignorant. It is one of the most popular early vegetables, and very easy of cultivation. All that is necessary is, after thorough spading, to have the ground well manured and forked over, and for a bed of

eighteen by thirty-six feet to mix in about a bushel and a quarter of salt.

It is very important in cutting asparagus not to cut too deep, and very little cutting of any kind should be done until the bed is two or three years old. The roots should be planted about four inches deep and fourteen inches apart, and, if well taken care of, a bed of asparagus will last for an almost indefinite period of time, and furnish an abundance of healthful food. The expense of planting a bed is comparatively small, and no after cultivation is necessary except to keep out weeds.

Asparagus can easily be had before the season by placing a sash over part of a well-established bed. The frame should be put up in the autumn, and the outside banked to the top to keep out hard frost. After the surface has frozen a little, it should be covered to prevent the frost from going in deep. The 1st of March will be time enough to put on the sash and let in the sun, and large profits would result from very little trouble.

Fine tomatoes that can be grown in a small space are always worth growing, and, where there is room for only a few plants and the appearance of the garden is a matter of pride, fence cultivation, or the single stake method, is particularly desirable. For an abundant crop and early maturity, the latter plan is very satisfactory. "Each plant being grown as an erect pillar six to eight feet high, the utmost possible production is obtained from a small area, and full flavor and color are secured because every berry is held up in full light and free air, with large thick leaves to feed and screen it. Circulation and growth are not impeded by any twistings of the stem, and the plant continues productive till the weather becomes too cool for more growth."

For success in this method, the stakes should be firmly set before the plants are put out, and these supports must

be perfectly straight, about an inch thick, and from six to nine feet high, according to the kind of tomatoes grown. It will be understood that the stem of the plant is kept quite upright by being tied to the stake now and then as it advances, taking care to loosen or remove any strings that become so tight as to constrict it. If the plant does not stand as erect as a life-guardsman, the weight of its load will bear it down. The rest is done by pinching, which guides the plant as easily and effectually as the goad leads the ox. The main leader is never pinched, but kept right on toward the top of the stake."

The side branches, in this mode of culture, have a very neat appearance, three leaves and a cluster of blossoms being all that each one is allowed to bear, and it is important to have one of these leaves beyond the cluster.

Tomatoes are very susceptible to frost, and the fruit is of so perishable a nature that gathering it to keep in the house seems to be of very little use. But, if, before the frost has had a chance at them, the vines are dug up and suspended roots upward in a cellar, the ripe tomatoes will keep for a long time.

The general idea in regard to fruit is that raising it on a large scale is the only way to obtain profit from it ; but the knowledge of a few small facts will enable a person, with a very small capital in trees, to make what he has pay better than the acres of his more ambitious neighbors. For it is not all the battle to reap a large harvest of fruit ; quality is even more than quantity, and the way in which it is put up for market has much to do with the price it brings, and a fact to be especially noted is that *good fruit put up in small quantities will always meet a ready sale.*

Sometimes a small garden will contain, among the flower beds, two or three fruit-trees that do little or nothing in the way of blooming. These trees are very apt to lean over on one side, and one who has successfully tried the ex-

periment recommends that, in June or July, a strong twine be wound several times around the tree or a single limb, and tied as tightly as possible to a strong stake.

To produce extra large fruit, a fine, annealed wire may be wound tightly around a branch of a grape-vine or limb of a fruit-tree, a little below the fruit, which should be done *after* the fruit has set. This will make the fruit grow to an enormous size, while the limb swells out above the wire two years' growth in one.

One of the devices of English gardeners to make fine fruit look still more ornamental is related as follows: "Everybody knows that the ripening and coloring of fruit are due for the most part to light and heat, and that the roses upon an apple are influenced by the manner in which the sun strikes it. On looking on some fine wall fruit in a Kentish garden, the proprietor called our attention to the manner in which he allowed his peaches to be partially covered by a leaf or two in places—namely, where he wished them to remain green, and thus heighten by contrast the purple bloom on other portions of the fruit. There were many examples of a leaf being very sharply photographed upon the fruit, and the grower, by exercising a little care during the ripening season, thus enhanced the beauty of his fruit, and also its value, as in the case of the peach it is not only flavor, but its appearance, which governs the price at Covent Garden."

The size of apples and pears may be increased by moistening the surface of the green fruit with a solution of sulphate of iron, twenty-four grains being used to a pint of water. Three applications must be made: when the fruit is first set, when it is half grown, and lastly when it has attained three quarters of its size, but it should never be done when the sun is shining.

It will be seen that these experiments are not suited to general cultivation, but only where a little choice fruit

is desired. The profits, however, from small quantities, which, owing to extra size and ornamental appearance, bring an exceptionally high price, are quite as great, without the care and trouble, as those realized from more extensive operations.

Putting up the fruit for market is a process in which care and expense are sure to pay, and a fruit dealer in Western New York is said to obtain on an average a dollar more for his half-barrel packages of assorted pears, sent to New York market, than his neighbor who sends equally good pears. The only difference is that the first one lines his barrels with large smooth sheets of white printing paper, but the other said it did no good and he did not want the trouble. But the fruit when opened *looked* much better for the paper, and was probably somewhat protected from bruising.

Careful putting up, which shows a respect for the fruit, inspires a like respect in others, and purchasers of the best assortments, to whom money is no object, will cheerfully give for handsome, attractively packed fruit three or four times the price asked for that of inferior quality carelessly put up. In this respect, at least, the proprietor of a very small garden-plot may successfully compete with the owner of broad acres.

Some excellent advice for *keeping* fruit in marketable condition is given as follows: "The greatest secret in keeping fruit properly is that of an even, cool temperature, slightly above the freezing point, with very little variation. It is still a doubtful point whether a dry or a slightly moist atmosphere is the better condition to preserve fruit plump and sound, the former being generally adhered to, while some interesting experiments with the latter mode have resulted in entire success. Shelves placed in the fruit room or closet answer an excellent purpose, as small lots of some varieties may then be spread out evenly and thinly, and, as

the fruit commences to decay, the imperfect specimens can be removed in time to prevent the disease spreading. . . . It really seems as if nothing would satisfy some people as to the proper time for using fruit, unless they may enjoy the privilege of pushing their thumbs into the skin all over the surface. It is scarcely necessary to add that the practice quickly induces decomposition. Whenever you handle fruit, imagine for the time being that it is eggs, and govern your actions accordingly.”

THE END.

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